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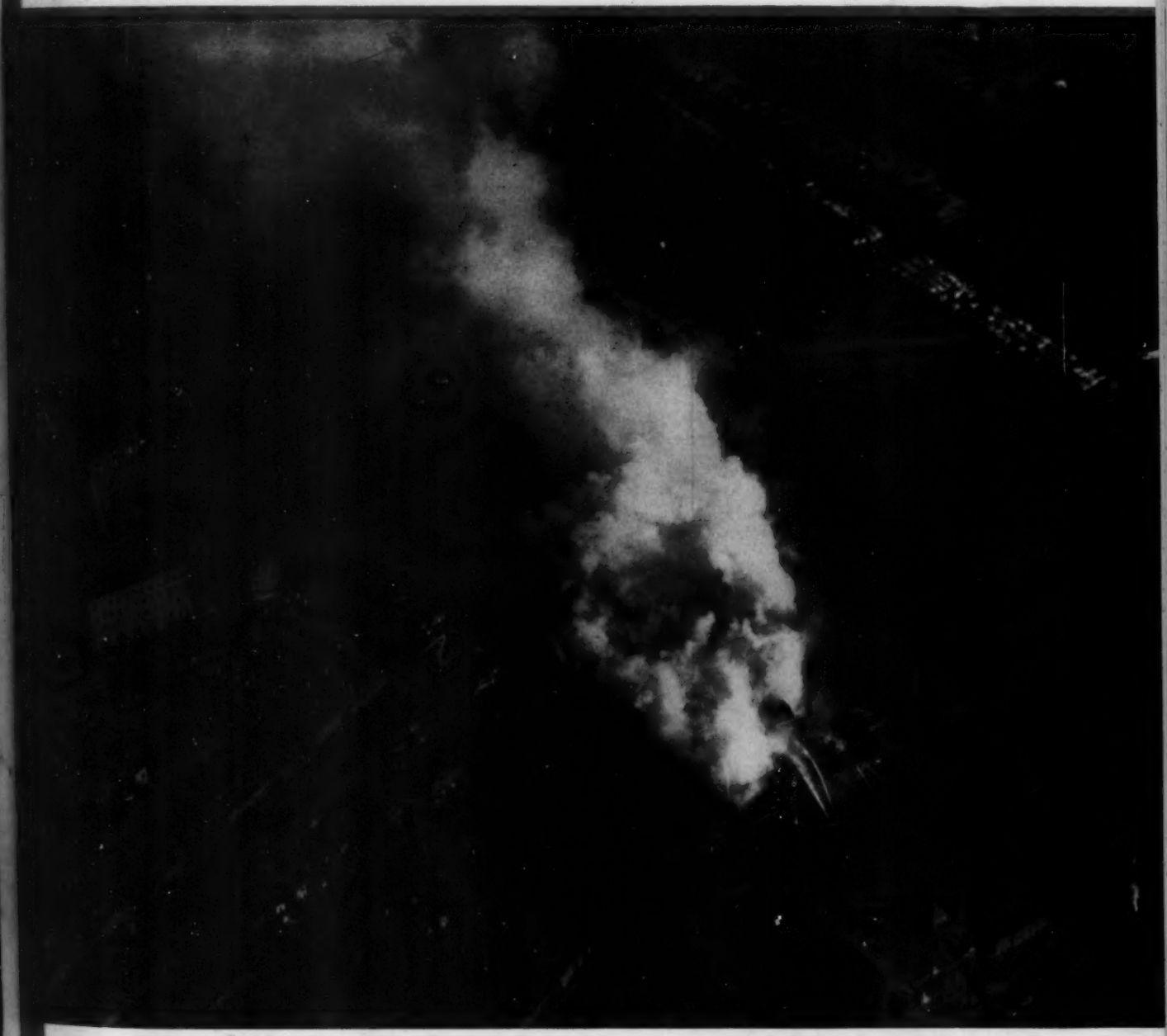
FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

Vol. 85, No. 3 MARCH, 1932 Member A.B.C.-A.B.P.



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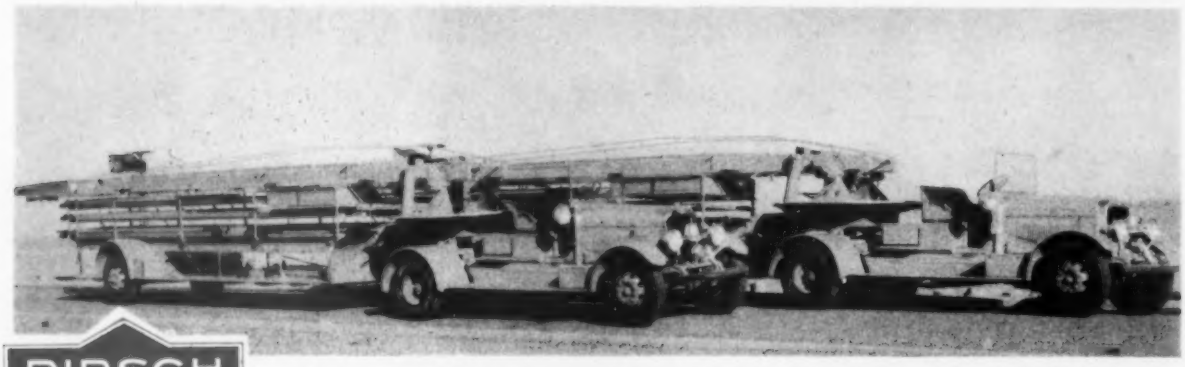

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AERIAL LADDERS
Recently Delivered to—

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POINTS OF SUPERIORITY

1. Hydraulic hoist raises main ladder with ladder pipe and man if necessary; operates easily and smoothly. Ladder may be stopped and locked at any angle. Main beam is lowered by gravity or forced down hydraulically.
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3. Turntable revolved in either direction mechanically.
4. Gas throttle and operating levers in compact unit on turntable.
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6. 9" chrome nickel steel heat treated, semi-trailer frame.
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The Commissioners of the
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have awarded PIRSCH a contract for two 85 ft. aerials and two pumpers for the city of Washington.

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NEW COMBINATION HANDLE FOR CARRYING TANK AND FOR HOLDING PUMP
Pat. applied for
STRONG AND DURABLE
TANK MAY BE CARRIED IN THE HAND OR ON THE BACK
EXTRA HEAVY TANK IS CURVED IN SHAPE TO FIT BACK SNUG AND FIRM
ALL TANK JOINTS LOCKED AND SOLDERED
BUILT STRONG
BRASS
INDIAN
FIRE PUMP

Tank of the new INDIAN is of extra heavy gauge, strongly seamed-locked to tank body. Seams are floated in hot solder, making strongest kind of joint—impossible to break or leak. Pump is made of heavy brass and throws 50 ft. stream with ease in any direction.

1. **Uses only clear water. No operating expense. No chemicals to buy or bother with.**
2. **New sturdy carrying handle permits carrying pump by hand, (see below) and also serves to retain pump when not in use.**
3. **Extra strong construction throughout enables the INDIAN to withstand the hardest kind of service and abuse.**
4. **The INDIAN Fire Pump combines the ideas of foremost authorities on forest, grass, brush, rubbish, awning, roof or spot fires. Its uses are unlimited.**

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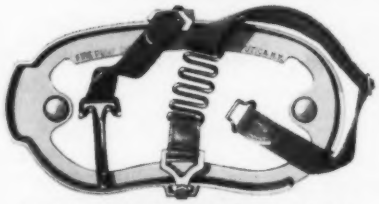
The Smith INDIAN Fire Pump



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Rack is usual bright red in color. Departments are ordering as many racks as they do fire pumps. Coil steel spring eliminates shock on rough roads.

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Ready for action. Notice freedom of arms. Operator can direct strong stream in any direction.

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Showing how pump can be carried by hand. Heavy brass pump instantly snaps in and out of handle.

ONE OF HUNDREDS OF TESTIMONIALS

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Utica, N. Y.

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Yours very truly,
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Bath, New Hampshire.

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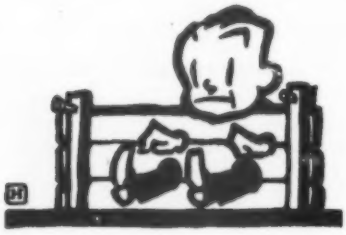

Are We Helpless?

THE blood-boiling sentiment aroused by the atrocity which befell the Lindberghs will undoubtedly start a wave of law enforcement and a move toward the strengthening of police protection everywhere.

● But why on earth does it always seem to require major tragedies to awaken us to the need of remedial measures? Kidnappings, murders, floods, depressions, conflagrations—we usually wait until the damage is done before devising proper safeguards.

● From the standpoint of fire protection, what is more conducive to catastrophe in a city than a fire department poorly equipped?

● What greater crime can be committed than to endanger the lives and property of a community with inadequate fire fighting facilities?

The Publishers

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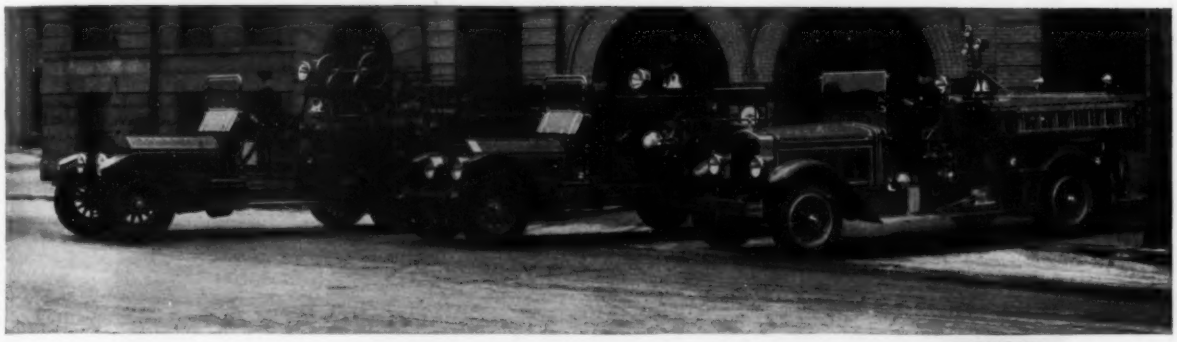
. . . *and get there* IN TIME!



THE modern motorized fire department counts Goodyear Balloon Truck Tires as an indispensable feature of reliable equipment.

Their inbuilt ability to stand up to the hardest duty with a minimum of time out for delay or road trouble is everywhere recognized as an extremely valuable factor in fire fighting.

Their famous All-Weather Tread, with its deep, thick, sharp-edged blocks is unrivaled for tractive power, for grip-fast, hold-fast power in turning corners and in mastering slippery going.

The final fact that Goodyears extend their better service over more miles and seasons is an item of tire economy appreciated in departmental budgets today more than ever.

Your nearest Goodyear Truck Tire Service Station Dealer can give you Goodyear performance records and full information about types and sizes—or write to the Government Sales Department, Goodyear, Akron, Ohio, or Los Angeles, California.

Extra valuable, too, are the advantages of Goodyear K-Rims—noted for their ease of operation, with open valve stem slot and split base; for their safety in service, and for their interchangeable mounting

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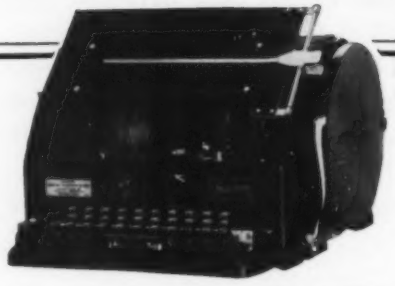
Teletypewriter Service sends 'em *STRAIGHT* to the fire!



TELETYPE

SUBSIDIARY OF
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An outstanding advantage of Teletype in fire alarm work is its ability to flash the *exact* address of a still alarm in legible, typewritten form. It helps to send equipment *direct* to the blaze with a minimum of delay.

Teletyping a still alarm is only a matter of seconds. The headquarters telephone operator swings 'round from the switchboard, presses a key, and then types the address on a Teletypewriter. As he does so it is recorded at the stations in large, clear capital letters. Teletype prints its messages on a narrow paper tape which can be torn off and carried by the driver. Its capacity is 370 letters or figures per minute . . . a speed sufficient to permit of sending a still alarm such as "ROOF FIRE AT 384 WEST STATE ST." in about five seconds' time.

The dependability of Teletype is proved by the fact that more than 65,000 machines are in constant use by police and fire departments, railroads, telegraph and telephone companies, press associations and business organizations. For further information consult your local telephone company or write the Teletype Corporation, 1400 Wrightwood Avenue, Chicago, U. S. A.

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AMERICAN-LAFRANCE AND FOAMITE CORPORATION

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THE GOODYEAR TIRE & RUBBER COMPANY

AMERICAN-LAFRANCE, for over 86 years the recognized leader in the development and production of fire-fighting apparatus and equipment, and GOODYEAR, acknowledged leader in the rubber industry, have combined their invaluable resources and experience to produce a new line of better fire hose.

THE GOODYEAR TIRE & RUBBER COMPANY contributes its tremendous wealth of experience and knowledge of rubber and fabrics combined with extensive research and manufacturing equipment. AMERICAN-LAFRANCE applies its thorough knowledge of fire department service and requirements and its extensive distribution facilities in all principal cities. The result of this combination is AMERICAN-LAFRANCE-GOODYEAR fire hose, a line of 2½ inch hose of unequaled quality made to stand up under the most severe emergency conditions.

The names, the reputations and goodwill of these two great companies are the purchaser's guarantee of merit of AMERICAN-LAFRANCE-GOODYEAR fire hose. Write AMERICAN-LAFRANCE AND FOAMITE CORPORATION, Elmira, N. Y. for complete information.

LA FRANCE AND FOAMITE PROTECTION

AN ENGINEERING SERVICE

AGAINST FIRE

3-FOLD *features* SAFEGUARD FIRE ALARM SYSTEM *against this—*

Motor Vehicle Accidents No Longer Hazard the Receipt of Fire Alarms

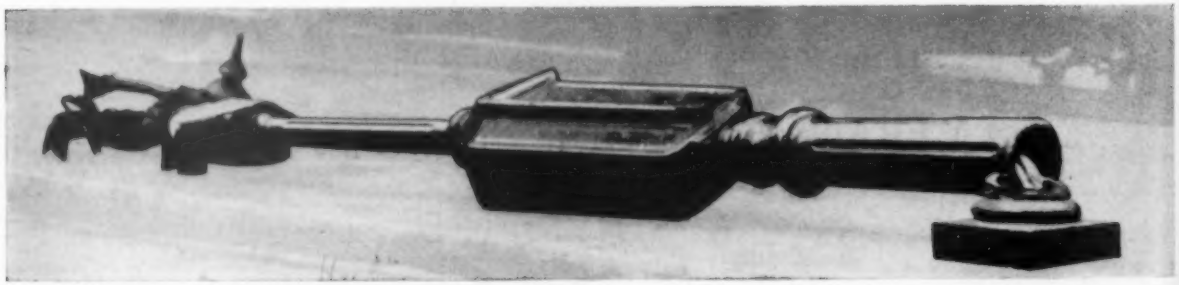
Accidents will happen to fire alarm pedestals as a result of either careless or drunken driving of motor vehicles. One city reports an average of 70 pedestals a year disabled from this cause—another smaller city had approximately seventeen such accidents in a twelve-month period.

The two photographs shown were taken in one municipality; the pedestal in the upper view having been knocked down TWICE in ONE month by trucks.

"A BOX A BLOCK"

In the past when a pedestal was knocked down, generally several fire alarm circuits were crippled, and scores of fire alarm boxes put out of commission for a short period, until the damage could be repaired. Now, the new 3-FOLD principle of fire alarm transmission and reception is being provided in both boxes and central office equipment of the latest Gamewell design, to offset such accidents as this and many other conditions which were hazardous to the receipt of fire alarms.

Gamewell sales engineers are located at convenient points around the country. The one nearest to your city will be glad to explain our 3-FOLD system in more detail, and show you how it can be applied to your needs. A letter to our factory will bring him, without obligation.



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FIRE ENGINEERING

The Journal of the Fire Protection Profession

Volume 85 MARCH, 1932 Number 3

With the Editor

A Sorry State of Affairs

Hackensack, N. J., a young growing city of some 25,000 population, is suffering from a severe epidemic of "sidewalk fire chiefs." So serious has it become that the local Chief was suspended recently because he did not, at an industrial fire, follow out suggestions by a police officer and a number of civilians who evidently thought they knew more about fire fighting than the Chief himself.

A police captain entered complaint because the Chief permitted fresh water streams to be operated on a burning pole, which carried high tension electric wires. The police captain's argument was that, contrary to *his* orders, the Chief of the Fire Department permitted firemen to continue to operate the line. And then some of the bystanders asserted that an aerial ladder was too heavily loaded with three or four men thereon, and criticised the Chief severely for his lack of judgment in permitting use of the ladder when it did not rest against a building.

Further complaint was lodged against the Chief on the ground that he didn't speak meekly to some visiting volunteer fire companies who were called in, by whom no one knows, to aid the Hackensack Department in handling the fire.

It is a sorry state of affairs when a capable Fire Chief must submit to such indignities, and still more pitiful when the city officials will take the word of those who should be ordered unceremoniously off the fire grounds rather than the word of their Fire Chief. No well regulated city will permit any authority within its fire lines except that of the Fire Department. The Police Department may cooperate with the Fire Department, but under the direction of officers of the latter who have sole command within the fire lines.

At a fire the Chief must have absolute authority. Instead of the members of the Police Department permitting the crowd to come inside the fire lines and annoy him, their duty is to keep the crowd outside the lines and let the Fire Department work unhampered. It is bad enough to have a severe fire on hand with a crippled force, due to reduction in personnel as an economy move, without having to stand the criticism and abuse of a lot of civilian wiseacres.

Insofar as the criticism at Hackensack is concerned it is absolutely unfounded. In the first place, there was in this instance no danger in using fresh water streams on the high tension lines in question. Fresh water streams are not good enough conductors to carry dangerous flows of current any great distance. And the fact that an aerial ladder was used while not resting against a building offers no room for criticism. If ladders provided by the city for the Hackensack department are so poorly built that they will not stand such treatment, they should be thrown out and replaced by modern equipment.

With regard to "courteous" treatment of volunteer companies from neighboring villages, the Fire Chief, and so far as he knows, none of his officers called the volunteer firemen, and consequently he is not responsible for their presence. If they were in the way, they certainly should have been promptly ordered off the grounds.

It's about time the authorities of some of our young American municipalities should wake up and follow the lead established by big cities in giving their Fire Departments every cooperation, and especially in preventing interference either on the part of the Police Department or the public at large.

Fred Sheppard

The Chemistry of Fire

—An Explanation of the Basic Reactions and Scientific Laws

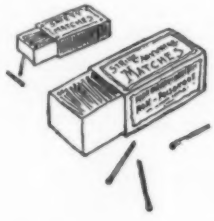
By FRANK R. DANIEL

Chief Engineer, Fire Insurance Rating Bureau, Milwaukee, Wis.

THE prevention and extinguishment of fires is today a recognized science. Our educational institutions have noted this fact, otherwise fire schools would not have been established. Special courses in this important subject will soon be inaugurated in our institutions of learning. At the present time, all the knowledge which is available regarding the origin and extinguishment of fires, the behaviour of gases, the causes of explosions, etc., are contained in the works upon the recognized sciences. Some day they will be correlated for the benefit of the fire-fighting profession.

The chemistry of fire sounds academic, but it is not. Such material as has been printed in books is clothed in scientific terms which the average person does not understand; therefore, he is prone to close his mind to an understanding of this simple problem.

The science of chemistry refers to fire as an oxidizing process. It is referred to as combustion, fire, flame, evolution of heat, etc. Fire, or combustion, is defined as a "chemical process" accompanied by the evolution (giving off) of of heat. Another way of defining this is "the combining of oxygen with materials which have an affinity (desire) for oxygen." The air in which we live is composed of two principal gases; about four-fifths by volume is nitrogen gas, and approximately one-fifth is oxygen gas. The oxygen in the air is necessary to our existence, as well as to the existence of animal and plant life. Insofar as we are concerned with the subject of fire, without a liberal supply of oxygen we cannot have a fire.

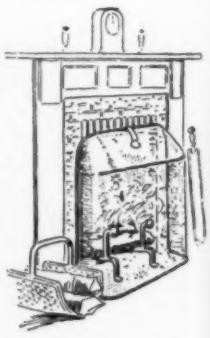


Materials which burn may be called combustible substances. When these materials are heated to a known temperature (known as the kindling temperature, ignition temperature, temperature of combustion, etc.) they have an ability to combine with oxygen, thereby creating fire, or flame. The chemist calls this process oxidization. It may manifest itself in many different forms. We, as human beings, breathe to exist. It is the oxygen of the atmosphere which creates the heat in our bodies. The rusting of a piece of iron is oxidization, as well as the burning of combustible material even though flames are not visible.

Such substances which have an ability to combine with the oxygen of the atmosphere we will know as combustible substances, or materials which will burn. The temperatures of combustion of different substances vary widely. Iron will burn in the presence of oxygen when heated to a temperature of several thousand degrees. A few substances will oxidize, or burn, at temperatures below the freezing point. A piece of wood when heated to a temperature of about 550 degrees F. unites with the oxygen of the atmosphere, and fire or flame ensues. Solid materials usually require a higher ignition temperature than volatile liquids require. Some substances have a very high affinity for oxygen and produce the phenomena of flame very readily. For example, a piece of phosphorous exposed to the oxygen of the air will instantly produce fire or flame. This is prevented from burning by keeping it covered with water, thereby excluding oxygen. The materials used in the ordinary match oxidize at a very low temperature, which is usually produced by friction.

Summarizing what we have just passed over, we find that all substances which burn have what we will call a temperature of combustion. When heated to this temperature they form a union with the oxygen of the atmosphere, resulting in fire or flame. Therefore, in order to have a fire we must have a combustible substance, heated to its ignition temperature and the proper supply of oxygen. The two things with which we are mainly concerned in this study are that we must have a temperature, and a supply of air to support the combustion.

When materials burn they give off heat In your home you have a stove in which there is a relatively small amount of burning material. The heat given off from this stove keeps your home comfortable in the winter. A small amount of fire in the stove gives off sufficient heat to keep comfortable the air in an area a great many times larger than that of the fire.



With a few exceptions, all fires are small in their origin. To start a fire in a stove a small quantity of fine kindling is used. The smaller splints of the kindling are ignited by the flame of a match. The small splint starts to oxidize, or burn, and doing so it generates enough heat to bring adjoining splints up to the temperature of combustion; they in turn unite with the oxygen of the atmosphere, and our fire grows in proportion. This is the principle involved in the spread of fire in buildings. A small fire liberates heat, the heat wave comes in contact with adjoining materials and raises them to the combustion temperature, and the process grows, as well as the fire. The fire has spread from the small blaze somewhere in

(*Continued on page* 123)

Tests to show what may be expected from fire hydrants in various sections of Zanesville, have revealed which areas were in need of more protection and have made the Fire Department more familiar with the water system. Hydrants are marked to indicate type of flow that may be expected.

Fire Flow Tests

By SCOTT POWER,
Chief of Fire Department,
Zanesville, Ohio.

FIRE in certain districts, especially those in buildings situated on elevated areas always are a source of considerable concern to fire fighters. The question racing through the mind of the fire captain or battalion chief is whether the flow pressure at the nearest fire hydrant will be of sufficient strength and whether the hydrant will flow sufficient water to successfully battle the blaze.

Mindful of these two ever present questions, we determined to devise a system whereby we would not be forced to guess until we actually found by a test of the hydrant to be used. Often precious moments were lost while we cut in a pumper to boost the stream and its pressure to the point where the water supply would be of sufficient flow and pressure to conquest with the flame.

To memorize the flow and pressure of 600 fire hydrants in our city would be a momentous task. A simpler system must be devised and of necessity a solution was evolved.

The solution itself was as simple as the most elementary equation, its application as cheap as a burnt match, and as efficient as the most modern design of dynamo.

The domes of the hydrants merely were painted to instantly flash the information to the firemen.

While it was a very tedious job, taking considerable time, we feel that the effort was well worth the results. The survey taken covered about six hundred hydrants. In planning this work a number of men were selected and taught the use of the Pitot gauge and simplified hydraulics. The city was divided into what we called "hydrant districts." High valued property was charted in a district by itself.

The chart which was used to determine the number of gallons per minute was submitted to the Ohio Inspection Bureau for approval.

Initial Pressure Survey

The pressures were taken in the following manner: Two hydrants were selected on the same main. On one hydrant a pressure gauge was placed on a single opening and the hydrant turned wide open. That gave the static pressure. On the other the Pitot gauge was used on a single opening. That determined the flow pressure. The firemen at the second hydrant made notations of the static pressure and the loss on pressure while the other hydrant was flowing.

Tabulation of Hydrant Tests Made in District of Zanesville

	Hydrant Location and No.	Head Pressure	Flow Single	Flow Double	Loss Single	Loss Double	Gallons P.M. Single	Gallons P.M. Double	Size of Main
292	Pine-Flag	118	58	32	26	40	1282	1899	8"
293	Pine-West Main	118	54	30	26	40	1235	1840	8"
294	West Main at 42d	118	35	13	28	42	994	1211	..
295	West Main-Beaumont	118	38	19	30	35	1035	1463	12"
296	Pear St.	112	14	..	60	..	628	....	6"
297	West Main-Melrose	120	45	18	30	35	1121	1424	8"
298	West Main-Young	103	3	..	12	..	291	....	6"
299	West Main-Osage	101	45	19	40	52	1121	1424	8"
300	West Main-Augusta	110	38	14	38	48	1035	1256	8"
301	West Main-state	110	17	7	23	30	692	889	4x8"
302	Belknap - Munson School No. 1 R.	100	6	..	10	..	411	....	4"
303	Belknap - Munson School No. 2 L.	100	36	17	35	40	1007	1384	8"
304	Ridge-Belknap	102	20	..	30	..	751	....	8"
305	Belknap-Cherry Alley	102	20	..	50	..	751	....	8"
306	Belknap-Clover	102	25	13	35	50	823	1211	8"
307	Brighton Blvd.-Dryden Rd.	110	24	9	30	35	822	1008	8"
308	Abington Ave.-Dryden Rd.	110	35	17	35	40	979	1384	8"
309	Abington Ave.-Ayers	110	6	3	45	60	411	581	4"
310	Abington Ave.-Cedar	110	5	..	5	..	375	....	4"
311	Luck-Cedar	110	15	..	25	..	650	....	8"
312	Luck-Ayers	105	33	16	37	43	950	1346	8"
313	Luck-Shelby	80	22	12	30	45	787	1163	6"
314	Ohio east of Blvd.	100	5	3	15	18	375	581	4x6"
315	Indiana east of Blvd.	100	7	4	20	30	445	671	6"
316	Virginia east of Blvd.	95	7	2	45	50	445	475	4"
317	Homewood-Coopermill Rd.	100	5	2	50	55	375	475	4"
318	Indiana-Pine	90	20	9	30	34	751	1008	6x8"
319	Indiana-Luck	95	19	9	50	55	732	1008	8"
320	Indiana east of Pine	90	5	3	25	30	374	581	4"
321	Pine-Coopermill Rd.	85	5	2	10	15	375	475	6"
322	Coopermill Rd.-Mathew	95	1	0	5	5	168	168	4"
323	East Virginia	90	4	..	10	..	336	....	4"
324	Baker-Mathew	72	7	..	20	..	445	....	4x6"
325	Baker-Cary	72	19	8	28	30	732	950	6"
326	Ohio by Pine	90	7	3	22	25	445	581	4"
327	Munson-High St.	72	15	6	37	47	650	823	8"
328	Pine-Munson Home	72	21	9	30	40	751	1008	8"
329	Pine-Fisher	92	18	9	32	34	712	1008	8"
330	Cliffwood-Shelby	70	5	..	20	..	375	....	4"
331	Oak-Fisher	70	8	4	20	25	475	671	4"
332	Prospect-Oak	70	8	3	20	25	473	581	6"
333	Grandview by Cliffwood	75	4	2	35	37	336	475	4"
334	Grandview above Pine	75	2	..	35	..	238	....	4"
335	Pine-Prospect	92	23	11	32	34	788	1114	8"
336	Prospect above Luck	100	7	4	25	30	445	653	6"
337	Hull-Columbia	115	18	7	30	35	712	889	6"
338	Pine-Vine	112	20	8	35	40	751	950	4x8"
339	Pine-Muskingum	112	37	12	40	50	1013	1163	8"
340	West Muskingum	112	59	34	40	55	1314	1958	8"
341	Luck-Vine	112	8	..	10	..	475	....	8"
342	Ridge-Muskingum	110	36	15	35	45	1007	1300	8"
343	Ridge-Chapman	110	22	9	30	40	788	1008	8"
344	Chapman St.	110	4	..	10	..	336	....	4"

HYDRANT DISTRICT
East of Brighton Blvd.-North of Coopermill Rd.-West of Pennsylvania R. R.
Sheet 6

Readings were taken of the hydrant with double openings. By the use of the chart we determined the number of gallons per minute the hydrant flowed. If there as but one hydrant on the main, we took the static pressure and loss from another hydrant on which the main was connected where the flow pressure was being taken.

Result of Survey

We found hydrants flowing a certain number of gallons per minute and other hydrants on the same main which should have had the same flow. Upon investigation we found that the valves were not entirely open or were defective both in the hydrant and in the street; all of which was corrected. In one instance the flow pressure was being taken from a large size main and no loss developed. The flow from the hydrant was such that it should have made some loss on the main. This was called to the attention of the Water Works Department and upon investigation they found that one of the valves on a standpipe on top of one of the commercial buildings did not close but fed back into the main, which was a serious matter.

The water system in any city is no better than the maintenance of the valves. It does not matter how efficient your system may be, if there are no stringent rules governing the operation and maintenance of the valves there is bound to be a serious inefficiency in the operation of the system both for domestic and fire service. Too much cannot be said about the maintenance of valves.

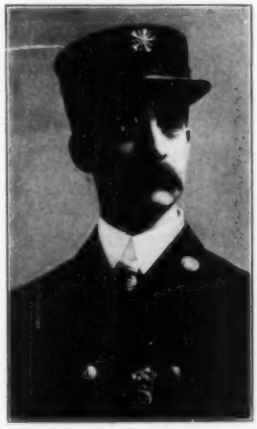
This survey has provided valuable information to industries. Just recently an industry wanted to install a sprinkler system in its factory and we were able to show them without going out of our office the quantity and pressure of water available. The government is enlarging the Post Office at this time and the engineer wanted to know the amount of water available for domestic and fire purposes. He was very much pleased with the detailed information we were able to give him.

The survey showed all of the defects in the water system as well as the quantity and pressure of water in every section of the city. Since this survey has been made, bonds have been issued for an additional standpipe and the enlarging of water mains. By using this data and making another survey after the improvements have been installed, we will be able to show what sections of the city receive the increased volume and pressure of water, and the per cent of increase.

The bases of all fire hydrants are yellow. The color of the dome denotes the capacity. For instance, a red dome denotes a thousand or more gallons per minute, a green dome from six hundred to nine hundred, and a grey dome from three hundred to six hundred. A solid color denotes a flow of from three hundred gallons down to zero and is the sign for use of the pumper.

Chief Melhuish, of Brandon, Resigns

After more than forty-five years of continuous service as a fireman in prairie towns and twenty-three years as Chief of Brandon, Manitoba, Canada, John Melhuish is to resign from the fire service on March 31.



Ex-Chief John Melhuish

He came to Brandon in 1885 and worked in a tailor shop. A year later he decided to leave Canada and to live in the United States. He had reached Winnipeg and was recalled to Brandon to serve with the Fire Department.

Mr. Melhuish was placed on the active list in 1888 and in 1891 went to Moose Jaw. There he was asked to organize a volunteer Fire Department. In 1895 he returned to Brandon and resumed his service with the volunteers. In 1902 he was appointed captain and in 1907 was given a service medal for twenty-two years service.

Captain Melhuish went to Saskatoon, upon recommendation of the Mayor, to become Chief. This was his first position as a paid fireman. Six months later he returned to Brandon to become Chief of the recently organized paid department.

He is retiring now because of ill health. He hopes that a few months in California will bring about a change for the better.

Southern California Chiefs Meet

The eleventh bi-annual convention of the Southern California Fire Chiefs' Club was held at Avalon, Catalina Island, Cal., on January 23 and 24. The convention was honored by the presence of Chief D. W. Brosnan, Albany, Ga., President of the International Association of Fire Chiefs; Jay W. Stevens, Executive Secretary, I. A. F. C., and Chief William Mohr, Santa Monica, Cal., President of the Pacific Coast Association of Fire Chiefs.

Jay W. Stevens and Chief Brosnan were given places on the program. The banquet was held Saturday evening at the Hotel St. Catherine with Chief C. E. Sullivan of Avalon as toastmaster. The Pasadena Fire Department Band helped entertain the delegates.

Following are the new officers: Chief Frank A. Bovet, Alhambra, President; Chief A. H. Lankford, Glendale, Vice-President, and Chief Charles E. Smith, Chula Vista, Secretary and Treasurer. The next meeting will be held at Big Bear, Cal., in June.

Members and Guests at the Southern California Chiefs' Convention

Problems Resulting From the Public's Misconception of

The Hazards of Gasoline

By CALVIN M. JOHNSON,
Chief of Fire Department,
Knoxville, Tenn.

Chief Calvin A. Johnson

THE increased consumption of gasoline and oil in the past few years has put fire departments face to face with many serious problems in fire fighting. Cities having storage yards add still a greater danger to firemen and the surrounding property. Oil fires always contain the possibility of a conflagration—if an explosion occurs the burning oil is apt to be scattered over the adjoining building and cause further fires of major size.

There is no great amount of difference between fighting a gasoline fire and fighting an oil fire. The same system will be found to hold good in both cases, except that in gasoline fires extra precautions should be taken owing to its highly inflammable nature, for the gas which arises from a burning gasoline tank, if confined, is much more likely to cause an explosion endangering the lives of firemen if they are working close. While gasoline is a highly inflammable liquid, its explosive properties do not appear until its vapor becomes mixed with air. For this reason a tank completely filled with gasoline is less dangerous, from an explosive point of view, than is one recently emptied. Under the latter condition the part of the tank unoccupied by the liquid becomes filled with a mixture of air and vapor which is highly explosive when ignited.

Domestic Hazard of Gasoline

The public, in general, is apprehensive of the fire hazard of gasoline and other inflammable oils; but unfortunately, has not grasped the actual facts of the situation, and, in considering the subject from the viewpoint of public safety, the emphasis is often misunderstood.

A quart of gasoline brought in the kitchen for cleaning clothing may be more hazardous than an eighty thousand barrel gasoline tank properly constructed and located: the larger tank, is, in general, under supervision of men familiar with the properties of gasoline who have found by experience that it is good business to take proper fire prevention precautions; whereas, the woman using gasoline in the kitchen is ignorant of the properties of the liquid—she does not realize the explosive character of a mixture of gasoline vapor and air, nor does she know how easily this combination of gases may be ignited.

Gasoline and other inflammable oils are always potentially dangerous, but, like other fire hazards, their use may be safeguarded. After many years of experience, methods of storing and handling these inflammable liquids have been developed, which tend to minimize the potential hazards, and, through the application of recognized measures of fire prevention and protection, the public safety from gasoline and oil fires may be reasonably safeguarded. It is the purpose of this article to urge an intelligent viewpoint of this entire problem and to direct the attention, not merely to the properties where there is visual evidence of the presence of large quantities of gasoline and oil, but to other situations where the fire hazards may be far more acute.

Various other liquids, such as ether and alcohol, have hazards similar to gasoline and other petroleum products and are properly subject to the same type of municipal regulations as are applied to gasoline, kerosene and similar liquids. The principles discussed in this paper are all applicable to flammable liquids, irrespective of whether they are derived from petroleum or other sources, but, as gasoline is the flammable substance encountered in the largest quantity, it has been convenient to discuss gasoline; with the understanding, however, that the same comments are, in general, equally applicable to other flammable liquids.

Liquid Gasoline Not As Dangerous As Vapor

There is a popular belief that liquid gasoline is explosive. As a matter of fact, as long as the gasoline stays in the liquid form there is no danger of an explosion. It is only when gasoline is vaporized and the vapor mixed with air in certain proportions, that it becomes explosive. Lack of knowledge of this simple fact, which is illustrated by the every-day operation of the automobile engine, has been responsible for a good deal of unnecessary fear about the storage of gasoline in closed containers, and at the same time, for taking foolhardy chances with gasoline vapor. The ordinary gasoline tank contains so much vapor above the liquid

"Men handling gasoline and other flammable liquids every day tend to become careless and neglect necessary fire prevention precautions. This is probably the principal reason for the fires that occur in connection with gasoline and oil stoves; however, they are readily preventable, as has been demonstrated by the experience of the larger oil companies. . . . 'No Smoking' rules cannot be too strictly enforced."

level, that the mixture is too rich to explode. The greatest danger is the supposedly empty tank.

Dangers From Gasoline Low-Lying Vapor

Before repairing gasoline tanks of any nature, they should first be thoroughly washed out, to remove any remaining vapors that may remain in the tank after emptying the contents.

Gasoline vapor is heavier than air, and where there is no special ventilation, it will flow along the floor, through doorways and along the ground, sometimes to be ignited at a great distance from its point of origin. This point should always be remembered in connection with the use of gasoline in any quantity. This is a treacherous hazard, for vapor may collect in the bottom of pits or near the floor in buildings, not reaching high enough to be detected by the scent of smell of a man walking in the building, but nevertheless, present in sufficient quantities for a serious fire or explosion if ignited by a chance spark, such as that which might be struck by the iron nail of a shoe against a concrete floor.

Familiarity With Gasoline Causes Carelessness

Men handling gasoline and other flammable liquids every day tend to become careless, and neglect necessary fire prevention precautions. This is probably the principal reason for the fires that occur in connection with gasoline and oil stoves; however, they are readily preventable, as has been demonstrated by the experience of the larger oil companies, who insist upon strict observance of fire prevention precautions. Men are sometimes encountered who say that gasoline cannot be ignited by a cigarette, and they will even offer to demonstrate this by experiment as justification for their smoking while handling gasoline. It is true that under average conditions, gasoline may not be ignited by a burning cigarette—ignition takes place only when brightly glowing tobacco comes in contact with gasoline vapor and an air mixture of vaporable proportions. A thousand cigarettes may be smoked by a man handling a gasoline hose at a filling station without meeting conditions favorable to fire, but the thousand-and-first may cost him his life. "No smoking" rules cannot be too strictly enforced where gasoline or other flammable liquids are handled.

Home Dry-Cleaning

The fire and explosion hazard of gasoline is most pronounced under conditions where the liquid can readily evaporate and the vapor mix with air. The home use of gasoline for dry cleaning purposes represents an extreme hazard. Here clothing is saturated with the liquid which evaporates as the clothing dries. The slightest spark—a pilot light of a gas stove, or even the friction of rubbing garments—is sufficient to ignite the vapor. Hundreds of women and children have lost their lives because of the use of gasoline in this way. The sale of gasoline for home dry-cleaning purposes—or any similar home use—should be prohibited, particularly so in view of the fact that non-flammable dry cleaning liquids are readily available.

Crank Case Draining

The used oil drained from automobile crank cases contains more or less gasoline, the amount depending upon weather conditions and the method of operation of the individual automobile. Crank case draining should always be handled with this in mind, and should not be used for fuel in oil burner heaters, because the gasoline contents renders such use distinctly hazardous.

Keeping Flammable Liquids Out of Sewers

The disposal of waste, gasoline and other flammable liquids is frequently a problem in garages, dry-cleaning establishments and the like: emptying such liquids into sewers is an easy method of disposal, but highly hazardous, as has been demonstrated by the experience of various cities that have had serious sewer explosions. Whenever garages or other establishments have drains into sewers, oil trays should be required to separate oil from the water and prevent the escape into sewers.

A great responsibility is placed upon all Fire Department forces engaged in operations at oil fires, from the highest ranking officers to the member in the lowest grade, and it behooves each and every man to be on the alert to avoid any false move or improper action that might increase the hazard. A wrong move with a forceful stream for even a few seconds might be the means of developing a conflagration.

(From a paper read before the annual convention of the Tennessee Firemen's Association.)

FIRE LOSS DECREASED IN NEW YORK ALTHOUGH POPULATION HAS INCREASED

Most Fires in Tenements Started on Ground Floor—Per Capita Fire Loss Lowered Forty-four Cents Over 1930 Figures

By William Jerome Daly

DESPITE increases of 159,643 in population and 10,000 in the number of buildings, New York City fire losses last year were $2,753,285 less than 1930 and the actual fires dropped 397 while the alarms increased 1,566 over the previous year, according to a preliminary chart prepared in the office of the Acting Chief of Department and forwarded to the Fire Commissioner for inclusion in his annual report. The 1931 losses were $15,363,020 and there were 30,994 fires.

False alarms in the metropolis in 1931 numbered 10,812 an increase of 2,131 over the year 1930, of which 2,066 were from street boxes alone. The department used 75,297,180 gallons of fresh and salt water which is 36,428,125 less than the year 1930.

92% of Fires Confined to Place of Origin

The fire loss per capita dropped to $2.17 which is forty-four cents per capita less than the year 1930. The department maintained its customary good record of confining 92% of fires to the point or origin—same as 1930. Of the 30,994 fires last year 14,609 were extinguished without the use of water or chemicals from fire apparatus and 12,428 were put out with a single hose. Automatic sprinklers extinguished 371 fires during the year.

Of the 18,348 fires which occurred in buildings, 8,319 were in tenements of which number 2,158 originated on the ground floor and 1,969 started in the cellars. There were 11,970 fires in the street, vacant lots, fences and vehicles both on and off the highway.

New York City fireboats responded to nine calls for assistance at fires in the State of New Jersey. The City Charter of New York charges the New York Fire Department with the requirement of furnishing fire protection for the Port of New York.

The busiest battalion district in the city was the 44th in the Brownsville section of Brooklyn. There were 1,523 fires in that section last year. The 12th Battalion in east Harlem was next with 1,237 fires and the 17th Battalion district which embraces the Morrisania, Melrose, Fleetwood and Woodstock sections of the Bronx was third with 1,058 fires during 1931. The section of lower Manhattan south of Grand street and west of the Bowery and Catherine street which comprises two battalion districts had 492 fires —the smallest number in proportion to population and density than any other similar area in the greater city.

The Volunteer Fire Department

By N. N. WOLPERT,
Assistant Editor, Fire Engineering

A Series of Articles on Volunteer Fire Department Administration and Operation

Door Openers and Other Fire Department Tools

This article, the nineteenth of a series, describes a few of the common forms of door openers and other tools that are frequently used by volunteer firemen:

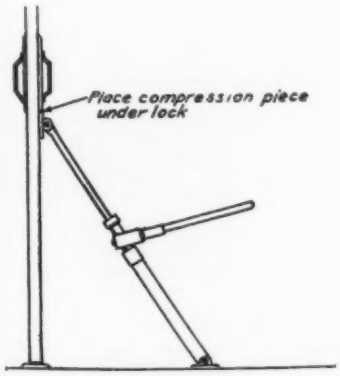
WHEN fires break out during the day, the owner or tenant is frequently near by to open any locked doors. At night, after business hours or when the apartment dweller has retired, doors and windows are securely bolted as a means of protecting property from theft.

Door openers are employed to force windows or doors so that firemen can gain entrance to the building. Several of the door openers such as the adz, Kelley tool, buster bar, and Callahan tool are nothing more than the so-called "jimmies" commonly employed in forcing entrance. However, the Hale and the Detroit door openers are specifically made for this one purpose and they are rarely used for other work.

The adz is a tool that is almost identical in design with the Kelley tool, and is very useful in forcing doors. Where the door swings outward, the adz blade is driven between the door and the jamb near the lock or fastener, and the handle is drawn outward. This usually brings the door open quickly by freeing the lock from the catch. Where the tool does not bring results when used in the manner described, the adz can be driven in below or above the hinges on the hinge side and the handle pulled outward as in the first case. This usually frees the door from the hinge or else the hinge breaks. Where the space for operations is limited, this tool will be found very effective, and it can be driven in with an axe.

Hale Door Opener

The Hale door opener is one of the most popular door openers. It is satisfactory on doors which will not respond to treatment by the adz



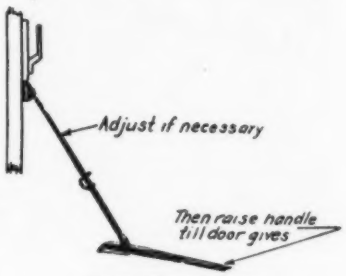
Hale Door Opener

It is very effective on doors that swing inward. The tool works on a ratchet principle. Operating the handle up and down forces the compression rod to rise as in the case of an automobile jack.

In using the Hale door opener, the compression piece is placed beneath the lock or the lock plate where it will have something firm to rest against. The base of the device is so set on the floor that it will not slip. Should the floor be of such material that the base of the opener might slip, use the heel of an axe blade to make a depression that will prevent the possibility of slipping. When securely set, the ratchet handle is worked as described before, until the lock gives. This tool can only be used where the door opens inward, and this limitation also applies to the Detroit door opener.

The Detroit door opener operates on the lever principle. The length from the fulcrum to the compression piece may be adjusted by removing the pin which is employed for locking the extension and for drawing the extension out to the desired point. As in the Hale door opener, it is necessary to place the compression piece beneath the lock plate or lock. When this is done and the point of the lever is securely placed on the floor, the door can be forced inward by raising the handle of the lever.

In using the Hale and the Detroit door openers, care must be taken not to place the compression piece against the panel of the door, for the application of force would force the panel in without opening the door. The panel of a door is not very strong, and to force one in may result in needless damage.



Detroit Door Opener

The Kelley tool is about twenty-five inches long. It is almost identical with the adz and is used in very much the same manner as the adz in opening doors; it is also used in the same manner as the wedge end of the claw tool. In opening doors with the Kelley tool, the adz end is driven in with the back of an axe, between the door and the jamb, and by pulling outward with the other end of the tool, the door is sprung open.

The buster bar is quite effective in its work and is widely used in New England departments. The pointed end of this tool is inserted in behind the door jamb and the fulcrum is placed on the heavy portion of the door. By pushing inward on the handle, considerable leverage is produced to force the door to slip its lock.

The Callahan door opener is used in very much the same manner as the buster bar and the jimmy. The pointed end is inserted between the jamb and the handle is forced inward. Where the door swings outward, the pointed end is placed between the door and the jamb, and the handle pulled outward, springing the door away from the lock.

The jimmy is widely used because it is so simple. A door is opened with this tool much in the same manner as the buster bar. The curved pointed end is inserted between the door and the jamb, and the other end is pushed inward against the door thereby springing the door from its lock. The two common sizes of the jimmy are eighteen and twenty-four inches long.

Rivet Cutter

Another convenient tool for forcible entry work is the rivet cutter. It is employed to cut off the heads of rivets so that it is possible to open doors locked on the inside or for opening up trap doors. The handle provided on the rivet cutter makes it possible to hold the cutter at a distance so as to prevent accident to the men. The rivet cutters of larger sizes are also used for cutting holes in concrete floors and in splitting heavy planking.

Live wires are frequently encountered to block Fire Department operations. If the power cannot be shut off, the live circuits endanger the safety of the firemen and it then becomes necessary to cut the wires.

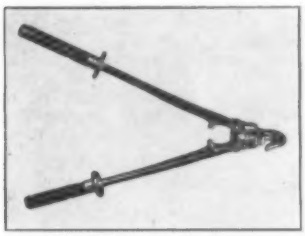
In cutting wires, they should be cut at the nearest support on the side of the source of supply so that the wire that will dangle to the ground will be dead. If wires should be cut within a building, they should be cut near the support closest to the front of the building. After being cut at one support, the other end of the wire at the next support should

also be cut so that the hanging wire will not be in the way of the men.

Even though it is quite certain that the wire has been cut at a point nearest the source of supply, there is always a possibility of cross connections so that the line which drops down may be alive. For that reason, the wire should be cut at both ends and the section taken out of the way of the men.

Wire Cutter

In cutting wires it is necessary to use properly insulated wire cutters. Such tools may be found in several designs. The most commonly used is the Steck wire cutter. In this tool the hook and the end of the cutter provides a means for grasping the wire while cutting it. The Boston wire cutter works somewhat on the same principle and is provided with a double hook attached to the side of the blade to hold the wire while it is being cut.



Steck Wire Cutter

Only one wire must be cut at a time for if both wires are cut, an arc may be created and the men may possibly be injured by molten metal thrown off by the arc that is formed.

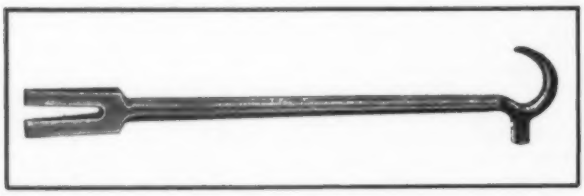
Wire brooms are widely used for beating out brush fires. They are made in two types, the broom type and the brush type. In beating out a fire with the broom type, the broom is held at an angle of about thirty degrees from the ground and the fire is vigorously struck by the broom. With the brush type, the fire is brushed toward the operator, the brush portions being brought down with a circular motion toward the ground, but inclined toward the operator.

When operating on a hot grass fire, the wires in the broom frequently lose their temper and following this are easily bent. Because of loss of temper, rattan types of brooms are favored by some departments. The rattan type broom is shaped somewhat different, in that it is more like the customary broom shape. Rattan brooms may burn off a little bit or the straws may char, but they never lose their "temper" nor bend as in the case of wire brooms. Where a water spray is used in connection with brooms in beating out brush fires, there is little danger of any damage being done to the rattan by the fire, or even to the wires, if a wire broom is used. At present the wire brush is little used except for overhauling operations.

Claw Tool

The claw tool, which is also called the lock breaker and door opener is one of the handiest tools for general use in Fire Departments. So many are its uses, that only a few can be enumerated.

The claw tool is made in slightly varying shapes and sizes. Probably the commonest use of the claw tool is for forcibly



Claw Tool

entry work. It is particularly effective in breaking locks, opening doors, forcing windows, lifting iron shutters and prying open rolling doors. It is almost equally effective for opening up for ventilation or for getting at fires in such manner as by prying up the boards on the roof after the tin has been cut away, by opening up window frames to disclose the interior, by pulling metal ceilings, by removing lath and plaster, by opening wainscoting and baseboards and even by ripping off shingles.

Breaking a lock with a claw tool is a simple job, if the lock is on the outside. The lock can either be twisted off with the claw tool, by inserting the point in the staple or in the blow of the lock and then swinging the handle of the tool around, or by forcing the fork of the tool over the bow of the lock or staple, and then twisting it. For forcing doors inward, the fork of the claw tool is quite effective, being driven in between the door and the jamb, and then the door is pried inward. Where the door swings outward, it can be sprung slightly with an axe and the hook of the claw tool hooked over the top of the door, and the claw tool then raised upward to force the door outward.

In prying up flooring, or roofing, after the sheathing has been removed, the claw tool is used similarly to an axe. However, the handle of the claw tool has greater strength than the handle of an axe so that there is never any danger of snapping the handle off when prying up heavy planking.

In forcing up the flooring, the fork end of the tool is driven in between the boards and the hook end of the tool is forced toward the floor so that the board is lifted up. This same operation is used when working on roofs.

In ripping down metal ceilings, the point of the tool is driven into the metal and the tin pulled down. For shallow ceilings, the claw tool is most effective as it requires little space for operation. When necessary, the operator can stand on a table.

Folding Water Buckets

Canvas buckets are frequently carried on fire trucks operating in suburban or country districts. The buckets are usually collapsible and a great number can be carried in a small space on a truck. To operate, the buckets are drawn out to their full size and the braces locked. This provides a fairly good water carrier.

Canvas Bucket

Where it is necessary to change the size of the hose line, say from 3-inch to 2½-inch or to reduce the outlet of a hydrant opening, an appliance termed a reducer is used. Two types of reducers are commonly used—the plain female to male reducer, which is the simplest type, and the swivel type of reducer, which is more like the customary hose coupling and which can be atached in less time.

For bringing two or more hose lines into a single line, a siamese connection is used. A Y-connection is used to divide one large hose line into two single lines, although it is often used to branch off a 2½-inch line with two 2½-inch lines so as to use small nozzles on the two branch lines.

Siamese Fittings

Some siamese fittings are provided with clapper valves—small disc-like valves hinged at one edge which hang normally in a closed position and which are opened by a slight pressure of water from the line feeding into the siamese connection. The clapper valve is designed to prevent water from discharging from any one of the inlets in the event that a hose line bursts or is disconnected from the special fitting. The pressure within the siamese forces the clapper valve tightly against its seat and thus prevents the water from backing out through the burst line. However, the plain siamese fitting is is not provided with clapper valves.

In the siamese, the female couplings are on the two branches and the male coupling is on the stem. This is the manner of identifying the siamese fitting from the Y. The reason for branch layouts is to provide a large amount of water into a single line or else to avoid friction loss by laying parallel lines up to a point from which a single line may be stretched. By using parallel lines, the friction loss is reduced to less than one-third of what it would be if a single line of the same size were employed over the same distance.

As stated previously, the Y connection is used to split one line into two. It is distinguished from the siamese fitting by the female connection on the stem and the male threads on the two branches. The most common Y sizes are one 2½ to two 2½; one 3 to two 2½; one 3½ to two 2½-inch.

The single gate valve is intended to be used next to the hydrant so that the stream which it controls can be stopped without interfering with any others being fed by the hydrant. The same effect is produced as though the hydrant had independent gates on the various outlets. The gates may also be used in the center of lines to control the flow through these lines. If it is desired to reduce the pressure on a line without interfering with the pressure on the other

lines that are fed by the same engine or hydrant, the gate can be partially closed or throttled so that the pressure on the nozzle can be reduced because of the decreased flow of water. Single gates are manufactured for various hose diameters and are made male and female threads, both male, or both female as desired. They may also be purchased with different size couplings on either end, and in this manner may serve as a reducing coupling as well.

A small Y-connection with a gate is now commonly used for taking two small lines of hose from a single 2½-inch line through a shut-off nozzle. In other words, the Y screws directly on the end of the shut-off nozzle when the tip has been removed. The usual practice is to stretch two or one inch lines from the shut-off nozzle, using ¼, ⅜ or ½-inch tips.

Universal Coupling

An emergency universal coupling is used to provide some means of connecting lines of hose when couplings are not of the same thread or where coupling threads have been badly burred. It is used by companies that respond to outside communities where the threads are of different specifications from their own.

Universal Coupling

The coupling consists of a brass female connection on one end. The threaded nipple extends through to the universal end. The universal end of the coupling has projecting hooks and a cylindrical projection which fits within the coupling to which the universal coupling is to be attached. To use this connection, unscrew the section fitted with the hooks until the hooks can be engaged in the horns or pins on the female hose coupling. Then screw back the section until a tight joint is formed by the end of the universal coupling against the washer of the hose coupling. The female end of the universal coupling may then be used to connect to any 2½-inch hydrant or engine outlet, or to any male hose coupling having the same thread.

Hand Operated Water Pump

A portable water tank fitted with a hand pump is available for fighting small fires, roof blazes and for forest fire work.

Smith Indian Pump

It is marketed under the name of Smith Indian Fire Pump. It consists of a tank and a strap so that the tank, holding five to seven gallons of water, can be carried by a fireman on his back and his hands will be free for operating the pump. A short line of hose connects the tanks to the brass hand pump which is fitted with o nozzle and two different kinds of tips. It is possible to obtain streams strong enough to carry about fifty feet. This device makes it possible to bring water close to the fire, and especially at brush and other fires where it is not possible to take the motor apparatus, the portable pump has proven of value.

Plans Made for Newport Convention

A meeting of the Board of Directors and officers of the New England Association of Fire Chiefs was held in the Hotel Statler, Boston, Mass., on February 17.

Chief Joseph S. Lawton, of Newport, R. I., President of the association, directed the proceedings. Plans for the coming convention to be held June 21-24 in Newport were discussed and it was voted to give free space in the exhibit hall to all firms who have exhibited at five or more conventions of the association. This action was taken to celebrate the tenth anniversary convention and to encourage the exhibitors to make a big showing of apparatus and Fire Department supplies of all kinds. The rates to exhibitors other than those of five years standing will be materially reduced.

The meeting was attended by Chief Lawton, Chief John W. O'Hearn, of Watertown, Secretary-Treasurer; Chief James M. Casey, of Cambridge, Mass., Director; Chief Selden R. Allen, of Brookline, Mass.; Chief Thomas Almond, of Central Falls, R. I.; Chief John A. Savage, of Valley Falls, R. I.; Chief James W. Barker of Middletown, R. I.; Chief Arthur A. Griswold, of East Providence, R. I.; Chief Daniel B. Tierney, of Arlington, Mass.; Ex-Chief Irving F. Patt, of Central Falls, R. I.; Harry Belknap, of Boston, Press Representative; George W. Austin and P. Hildreth Parker, Registrars; and by Mr. Kent, of the Passenger Department of the Union Pacific Railway.

Hotel Viking, Newport, R. I., Convention Headquarters for the New England Association of Fire Chiefs

Secretary O'Hearn read the minutes of the previous meeting of the directors held in Newport and announced the death of an associate member of the association, District Chief David C. Gale, of Orange, Mass., who passed away on January 21, 1932.

It was decided that the registrars should hereafter be known as the Registration and Reservations Committee and that hotel arrangements for the Newport convention will be handled by them.

Chief Lawton outlined a tentative entertainment program which will provide plenty of features of interest and amusement for the Chiefs and ladies at the convention.

The Exhibit Committee will be composed of Chief Thomas Almond, of Central Falls, R. I.; Chief John A. Savage, of Valley Falls, R. I.; Chief James W. Barker, of Middletown, R. I.; and Chief Arthur A. Griswold, of East Providence, R. I.

The officers and directors attended the luncheon and the meeting of the Fire Chiefs Club of Massachusetts. Mr. Kent, of the Union Pacific Railway, outlined plans and rates for the trip to San Diego, Cal., for the convention in October of the International Association of Fire Chiefs.

HARRY BELKNAP.

Mutual Aid Group Being Formed

A system of covering up in the event of large fires, is being planned by a group of villages and municipalities on the north shore of Long Island. At the present time this group includes Roslyn, Oyster Bay, Bayville, Sea Cliff, East Norwich, Glenwood, Glen Cove and Syosset.

The officers elected are Conrad Zipperian, Sea Cliff, President; James Kelley, Oyster Bay, First Vice-President; Earle Cresser, Glen Cove, Second Vice-President; Peter Lynch, Roslyn, Secretary and Oscar Wiggins, Glenwood, Treasurer.

There was a large attendance of Fire Chiefs and Forest Wardens at a recent meeting of the Middlesex County Forest Fire Wardens' Association which was held in the town hall in Burlington, Mass. H. N. Wheeler, of the U. S. Forest Service, was the speaker. Chief Harold J. Conron, of North Reading, presided, assisted by the secretary, Chief Ernest N. Bartlett, of Billerica.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

USE OF MANUAL AND AUTOMATIC GAS SHUT-OFFS

IN the event of fire, it becomes necessary to shut off every possible agency that would tend to increase or prolong the blaze.

Most homes and buildings are equipped with manufactured or natural gas service, with a shut-off valve at the meter. But when fire has had a good start, it is often impossible to reach the control at the meter, and there are many cases on record where the meter has been broken off with the result that there is created a steady jet of flame.

As a means of simplifying matters and safeguarding life and property, shut-off valves, either manually or automatically operated, are placed at some point where they will be accessible to the firemen. Although some cities depend upon the gas company to shut off the supply to some particular service, it is always the firemen who are the first to reach a burning building.

The problem in full that is discussed in this issue appears in the box on this page. In the box on the following page is the question that will be discussed in the next issue. Should you have some comment that you would like to add to the next discussion, you are invited to write to the "Round Table Editor," FIRE ENGINEERING, 24 W. 40th St., New York, N. Y.

HERE IS THE PROBLEM

What experience have your men had with leaking illuminating gas when entering a building on fire, insofar as asphyxiation is concerned?

To prevent the hazard of escaping gas, are you in favor of an automatic or manual gas shut-off or a similar device?

In the event that it is desirable, do you believe you can have your city pass such an ordinance; if not, what do you consider the chief obstacle against its adoption?

Discussion of the Question

Massachusetts has recently passed an ordinance requiring gas companies to use the automatic gas shut-off. A number of other cities also favor the automatic gas shut-off to reduce the possible fire damage. The replies received follow:

George S. Watson, Chief Engineer, Washington, D. C.: Some years ago this department frequently encountered fires where escaping illuminating gas greatly handicapped our efforts, not only in causing the spread of fire but also in its toxic effect on the department personnel. Repetitions of these experiences led to two efforts looking toward an improvement.

The first was the adoption of a regulation as follows (September 23, 1924):

"POLICE REGULATIONS
ARTICLE II—C
Gas Shut-Off Valves

"Section 1. Every existing building and every building hereafter erected, which is supplied with gas from an outside source through a service pipe line or lines of 1½-inch diameter or more or in which more than one gas meter is operated shall be provided with a manually operated emergency gas shut-off valve by the person, firm, or corporation furnishing gas service.

"Section 2. Such valves shall be in accordance with the following requirements:

"(a) The valve shall be an extra heavy plug cock of form and material approved by the Commissioners, shall be provided with quarter turn guide lugs, and the Utility furnishing the gas shall keep it lubricated and in condition for operation by the Fire Department for shutting off the flow of gas when, in the judgment of the said department, such action becomes necessary.

"(b) The stem controlling the gate valve shall project outside of the building and shall be placed not less than 12 inches above the surface of the surrounding ground.

"(c) The valves shall be connected with a conspicuous and convenient control box located as directed by the Chief Engineer of the Fire Department and so arranged as to allow the gas supply to the building to be shut off by the Fire Department immediately whenever the necessity arises. This control box shall be plainly marked so as to indicate its purpose.

"(d) The control box shall be fully protected from the weather and from accidental damage, and shall be closed by means of a screw cap having a pentagonal lug or nut, which, upon being removed, will open the control box and expose for operation the stem which controls the valve. The said pentagonal lug or nut and the end of the valve stem exposed by the removal of the aforementioned screw cap shall be of such size as to permit operation by the same wrench as is used in connection with the opening of valves in standard fire hydrants in the District of Columbia.

"Sec. 3. The installation and maintenance of all such shut-off valves, their connections, and any auxiliary devices used in connection therewith shall be under the supervision of the inspector of plumbing of the District of Columbia.

"Sec. 4. Any person, firm, or corporation violating any of the provisions of this article or refusing or neglecting to comply with any provision thereof, shall, upon conviction, be liable to a fine of not less than $5 nor more than $40 for each offense, and each day's failure to comply with the regulations shall be deemed a separate offense."

Since the adoption of the regulation, all new buildings equipped with gas service lines of 1½-inch diameter or greater have been supplied with appropriate valves. Great progress has been made each year in equipping the older buildings which had been erected prior to the adoption of this regulation.

The second means which we adopted as a remedial agent was to supply each unit of the Fire Department with filter type gas masks equipped with the "All Service" canister. Self-contained oxygen breathing apparatus of the half-hour type was placed in service in our two rescue squads. As a result it is rare that we have firemen overcome by escaping illuminating gas at fires.

Personally, I favor the manual type of valve over the automatic, due chiefly to its simplicity and positive action. The one in use here is operated by means of our

fire hydrant wrench and requires only a quarter turn to close.

The chief obstacle in the way of adopting either of the two above mentioned plans lies in the cost. It may be difficult to secure sufficient appropriations to equip a department with gas masks and oxygen breathing apparatus, and it may likewise be difficult to secure adoption of ordinances such as we have here. However, the merits of both propositions are such as to appeal to any fair-minded and impartial governmental authority.

F. J. Myers, Chief, Toledo, Ohio: We have had no cases of asphyxiation from leaking illuminating gas when our men have entered a burning building. In fact, if the gas has escaped in a burning building, the probabilities are that the gas has already become ignited and the risk of asphyxiation is not present.

However, there have been numerous instances where the fire has melted off the meter and the gas becoming ignited has intensified the fire. In such cases, we shut off the gas at the curb box. In the past, the gas company used lead pipe to connect the service pipe to the meter, with the result that when the temperature was raised sufficiently to melt the lead, the meter would drop off and the flow of gas from the service would cause a persistent fire. These old installations are now being changed so that the lead pipe is being replaced with iron pipe. The iron pipe is being used on all new installations.

I am very much in favor of a device that will automatically shut off the flow of gas in case of fire.

Fires have often been extended due to the inability of the department to promptly shut off the gas at the curb box, especially where the box had been covered over with snow or dirt so that it was difficult to find the box. If an automatic shut-off had been installed, the flow of gas would have ceased immediately.

Owing to the fact that the gas company services the gas up to the meter and that the proper place for the automatic valve would be between the meter and the service pipe, on ordinary installations, it would seem as if a proposed ordinance should make it mandatory for the gas company to install the shut-off instead of the property owner. I therefore would look for opposition from the gas companies when the ordinance is proposed. However, no effort has been made to have an ordinance passed in Toledo that would make it mandatory to install these protective devices.

Henry A. Fox, Chief, Boston, Mass.: While our men have encountered illuminating gas in entering buildings on fire, we have had very little trouble insofar as asphyxiation is concerned. Where we find conditions of this sort, the men are instructed to use gas masks. The gas company in this city always sends a squad wagon to all fires so that we have very little difficulty from that condition.

For years the automatic shut-off devices have been agitated in this city, and in this connection I am quoting Chapter 171 of the Acts of 1931, Commonwealth of Massachusetts:

"An Act Requiring the Installation of Certain Equipment in Connection With Gas Meters to Prevent or Retard the Escape of Gas in Case of Fire.

"Be it enacted, etc., as follows:

"Chapter one hundred and sixty-four of the General Laws is hereby amended by inserting after section seventy-five, the following new section: Section 75A. No gas company or municipality distributing gas shall, after January 1, 1932, install or replace a meter for the purpose of measuring gas supplied to premises for illuminating or other purposes, unless there shall have been attached to the intake pipe leading to the meter, in accordance with regulations to be prescribed and enforced by the department, an automatic device designed to prevent or retard the escape of gas in case of fire, and approved as to design and construction by the department."

E. E. Leffen, Chief, San Bernardino, Cal.: We have had very little experience with the combination of escaping unburned illuminating gas and a building fire. Neither have we had any experience with automatic gas shut-offs, but the gas company that serves this city installs all service meters and service shut-offs on the outside of all buildings in an accessible place.

With the cooperation that we receive from the gas company I do not believe we need an ordinance on this subject.

Giles Dow, Chief, Stoughton, Wis.: We have never had a man affected by escaping illuminating gas while working at a fire.

We have an ordinance which requires gas shut-offs for use in case of fire. I do not believe that such an ordinance is required as the hazard is slight. We have had a number of fires in buildings where gas is used, but we have had no trouble. My conclusion is that fires seldom or never cause an escape of unburned gas because heat sufficient to melt the meter ignites the gas. It is our practice to swipe out the flame with a wet towel or garment and to plug the orifice with a chunk of mud or a wet rag. Our gas company uses a four-inch pressure, about one seventh of a pound, so our plug does not blow out.

Our common council gives us excellent cooperation and supports any recommendation we may make to reduce the fire hazard. I am confident that if I advised such an ordinance as suggested, there would be no obstacle concerning its passage.

Otto B. Johannes, Chief, Columbus, Neb.: We have never had any of our firemen overcome by gas while fighting a fire, but some years ago a furniture store caught fire in the basement. This building had a gas line leading into the building and like a great many other places, the gas company was not required to install a shut-off that could be handled from the outside of the building. There was no way of getting into the basement as it was filled with water and boxes. A part of the floor fell in and broke off the shut-off valve where the gas line entered the basement. The gas company sent men to this fire to shut off the gas. They worked all afternoon, and after all of their men were overcome, they gave it up as a bad job. This task was finished the next morning. With the weather 22° below zero, you might guess what we did with the burning gas pipe. We let it burn.

I believe that there should be a shut-off valve at the outside of every building served by a gas line. This valve, if properly installed with a high grade of graphite, could be shut off and opened. The manual type would not be as expensive as the automatic.

I can think of no reason or objection that would prevent the city from passing an ordinance to control this matter. But it should be a state or better still, a national law.

Robert Agamedi, Chief, Lock No. 4, Pa.: If I find illuminating gas leaking, when entering a building, I order my men out of the building and have the gas shut off by means of the shut-off valve in the street or at the meter. The gas company has to be called to shut off the service, and in the meantime we continue to fight the fire.

I believe that an automatic shut-off would be a great help where there is a high pressure line. In homes like we have in this town, supplied with low pressure lines, I do not know whether the devices would work. I believe that the gas company should supply the Fire Department with the proper tools to shut the gas off at the curb.

Ed Archbold, Chief, Centralia, Ill.: So far we have had no trouble from gas lines, but on several occasions, we have had to send men in to shut the supply off at the meter.

I would be in favor of an automatic shut-off because sometimes meters are hard to locate. Often, due to the

HERE IS THE PROBLEM FOR THE NEXT ISSUE

What means have you taken to protect asylums, homes and institutions within your corporate limits?

Do you train institution members or inmates in the use of fire appliances? How?

What suggestions have you for making such buildings a safer place for the persons living there?

location of the fire, it is difficult and sometimes impossible to reach the meter. For the men this presents the problems of asphyxiation and the increased fire hazard. I believe that my city would see the logical side of this matter and would pass the necessary ordinance.

Charles E. Tovee, Chief, Chico, Cal.: We have an ordinance requiring manually operated shut-off valves outside the building for gas, electricity and water.

In case we have gas leaks in a building, prior to a fire, we ventilate the building and shut off the gas supply with the cut off in the street. Where a gas leak is caused by a fire burning off fittings, etc., we find that the leaking gas generally ignites at the time of the break. Shutting off the gas at the valve located outside the building, solves the problem.

George Holst, Chief, Marietta, Ohio: We have never had a case of asphyxiation from the natural gas that is used here, but we have had a number of gas explosions and these explosions have snuffed the fires out.

I am in favor of a manual shut off, one at the meter and one at the curb in the street.

I doubt if we could get an ordinance passed as the gas company will not serve a building if the piping will not stand more pressure than the gas that is served. While this is a natural gas town, we have had little trouble with the gas.

E. V. Stone, Chief, Ludlow, Mass.: We have had a number of fires, especially in cellars, that were caused by gas meter leaks. Our record has been kept free of asphyxiation cases as we ventilate as far as possible and we wear "all service" gas masks. In some cases, the leaks have been considerable.

I most certainly favor the automatic or the manual gas shut-off. The gas company that serves our town is to install automatic shut offs on all new installations and it will put such devices on all old installations as soon as possible.

Anthony P. Caird, Chief, Nutley, N. J.: In my fifteen years experience in responding to fires, there was only one case where a meter exploded.

I am in favor of an automatic or manual gas shut-off or a similar device to control that condition, providing the arrangement installed was foolproof.

I could recommend to the Commission of Public Safety that a resolution be drafted to cover this condition, but under the present condition of depression, they might not take steps to have the ordinance passed because of the money required to have it carried out.

Thomas A. Qualey, Chief, Medford, Mass.: We have had a number of fires where, when the Fire Department arrived, it was found that the buildings were charged with illuminating gas. There has never been a case of asphyxiation resulting from firemen entering a building.

I favor either an automatic or a manual gas shut-off.

It will not be necessary in this state for a city or town to adopt an ordinance to compel gas companies to install shut-offs. After January 1, 1932, it has become mandatory for the gas companies to install automatic shut-offs.

James T. Doherty, Chief, Norwood, Ohio: I have never experienced a case of asphyxiation from gas while fighting a fire, but I have had two gas explosions due to burst pipes. Two firemen were slightly burned about the face and head.

I am in favor of an automatic gas shut-off if it is a practical one.

If the National Board of Fire Underwriters would approve of this measure, and the large city would pass such an ordinance, our city would probably do likewise.

E. A. Westra, Chief, Miami, Fla.: We have been fortunate in that we have had no trouble from men being overcome by leaking illuminating gas at any time.

The manual shut-off is preferred. As a note of interest, a well equipped vehicle is furnished by the power company in Miami to take care of all overhead and high tension wires, gas line leaks and to shut off water connections as may be necessary at a fire. The men on this vehicle are very well trained and the truck answers all fire alarms.

We can have the city pass such an ordinance and there will be no obstacles whatsoever. We now have a gas ordinance pending which has been received very favorably by the administration as well as by the plumbing contractors.

E. C. Hoskin, Fire Marshal, Highland Park, Ill.: Where the building is heavily charged with illuminating gas to the extent that it presents a danger to life, we order gas masks to be used by the company working close to the fumes. The truck company is detailed to cut off the gas service valve from the building. If this is impossible, we call the emergency truck of the gas company to cut the gas service in the street.

I am not in favor of any kind of automatic gas control valve on gas service pipes. This would be dangerous to life and would add greatly to the fire hazards. The manual gas shut-off is used in this city and from my experience, is not practical. The service shut-off, after years of service, becomes rusty and impossible to turn. When the service box cover is broken off, the box fills with dirt and leaves the shut-off useless. Snow and grass cover the boxes and the boxes become difficult to locate.

No ordinance can be made to cover a situation of this kind. In the first place there should be a standard rule as to the location of gas shut-offs and it should be so located as to be accessible from the outside as well as the inside of the building. As a suggestion, I would recommend that gas companies adopt iron meters connected with iron fittings on the inlet and outlet sides of the meter. This would do away with the lead connections and a tin meter. It would lessen the fire hazard, and to a great extent, remove the danger of asphyxiation.

B. F. Turner, Chief, Minden, La.: I am in favor of a manual gas shut-off. The necessary ordinance could be passed in this city without any difficulty.

H. R. McMillan, Chief, Jacksonville, Fla.: Although we have had many fires and have come in contact with illuminating gas, we have never had men asphyxiated while working at a fire.

I have never had any experience with automatic shut-off valves, and they may work if kept in proper order. The manual type is used here, both at the meter and at street connections. We have had little trouble in shutting off gas.

* * *

ANSWERS TO PREVIOUS QUESTION

The following replies are in answer to a previous question on the control of dry cleaning in the home and the steps taken to educate the women to an appreciation of the danger involved:

C. Ray Ackerman, Chief, Nyack, N. Y.: Unfortunately there are no regulations here governing the use of gasoline for dry cleaning in the home but my interest has been aroused because of an accident here.

I attended a dwelling fire which was caused by static electricity igniting benzine used to clean clothes. The fire damage was considerable and the women narrowly escaped serious injury or death.

I studied a fire insurance policy, only to find this clause:

"privilege granted . . . (2) to keep and use not exceeding one quart in all, per tenant, of gasoline, benzine or naptha for household use, but the use thereof for cooking, heating or lighting is prohibited without special permission. . . ."

Not being sure of the correct interpretation of the term "household use" I ascertained from the New York Fire Insurance Rating Organization that it meant "cleaning purposes." They also explained this was to permit agents to write policies, protecting clients who unsuspectingly bought such volatiles for cleaning purposes.

What use is campaigning against this hazard if it is endorsed by insurance interests. One quart, we all know, may be enough to cause a fire which will destroy any building with any number of lives.

W. P. Weeks, Chief, Battle Creek, Mich.: Dry cleaning in homes is governed by the State Fire Marshal. We try to educate the public through local newspapers. The State Fire Marshal has always given us the very best of cooperation.

William Briggs, Chief, Shelbyville, Ind.: It is very difficult to regulate dry cleaning in the homes. We use the two local newspapers to call the public's attention to this hazard.

R. Chrisman, Chief, Roswell, N. M.: We have no way of regulating dry cleaning in the home. We have no city ordinance covering this. We conduct our educational program through the local papers. We have no State Fire Marshal.

I. A. F. C. DIRECTORS MEET IN NEW YORK TO PLAN CONVENTION

Tentative Arrangements Made by Western Representatives and Chief Brosnan Given Approval — Hotels Grant Special Rates

DEFINITE plans have been made for the coming convention of the International Association of Fire Chiefs to be held in San Diego, Cal., October 18-21. At a meeting of the directors of the Association held at the Pennsylvania Hotel, New York City, February 23, tentative plans that were made by Chief Brosnan and western representatives of the association at San Diego, were approved.

The exhibit hall and the meeting room will be under the same roof—the exhibit hall will be on the main deck of the San Diego municipal pier, and the meeting hall will be on the deck just above. It will be necessary for delegates to pass through the exhibit hall going to and from the meetings. Such an arrangement, Directors stated, should be of particular interest to manufacturers who have exhibits on the main deck. Chief W. Minter, Long Beach, Cal., is Chairman of the Exhibit Committee.

Railroads have granted a special round trip fare of 1 1/10 the regular single trip rate. If the trip is made via San Francisco, using a diverse return route, there will be an additional charge of six dollars for routing via San Diego. As an example, the special rate to Los Angeles and San Francisco from New York is $121.97; Norfolk, Va., $119.86; Toledo, Ohio, $95.27; Louisville, Ky., $92.66; Evansville, Ind., $90.30.

Convention headquarters will be at the U. S. Grant Hotel. Convention rates at this hotel are as follows: With bath, $3 single, $4 double and $4.50 with twin beds; without bath, $2 single and $3 double.

The New Plaza, across the street from Convention Headquarters charges $2 a day for a room with shower, $2.50 a day for a room with private baths and $1.50 a day for a room with private toilet.

Hotel San Diego which is four blocks from headquarters, has rates varying from $1 to $1.50 for a room without bath for one to $3 for a single room with bath and $5 for a room with bath and twin beds.

El Cortez Hotel, five blocks from headquarters has a convention rate of $3.50 single, one person in the room, and $5 double, with either double bed or twin bed equipment.

A special convention rate has also been quoted by the Aqua Caliente Company, near Tijuana, Mexico, for Chiefs who may care to make a visit to this noted resort.

At the Directors' meeting held in New York City, the following were present: President D. W. Brosnan, Chief, Albany, Ga.; Vice-President Richard Lee Smith, Chief, Pittsburgh, Pa.; Secretary-Treasurer James J. Mulcahey, Yonkers, N. Y.; Director George W. Hedden, Fire Commissioner Buffalo, N. Y.; Director Raoul Gauthier, Chief, Montreal, Que., Canada; Fred Shepperd, Headquarters Manager and I. Herbert Case, Vice-President and General Manager of FIRE ENGINEERING.

At the annual meeting of the Charlestown Veteran Firemen's Association, District Chief Philip Tague of the Boston Fire Department was elected President.

J. W. Scannell, Fire Commissioner of Lewiston, Me., was the speaker at the last meeting of the Maine Fire Chiefs' Association.

Chief H. R. MacMillan of Jacksonville, Fla., was honored on his sixty-first birthday, by an oyster roast arranged by firemen and city officials. The roast was held in Fire Station 4. On behalf of members of the Fire Department, the Chief was presented with a large birthday cake.

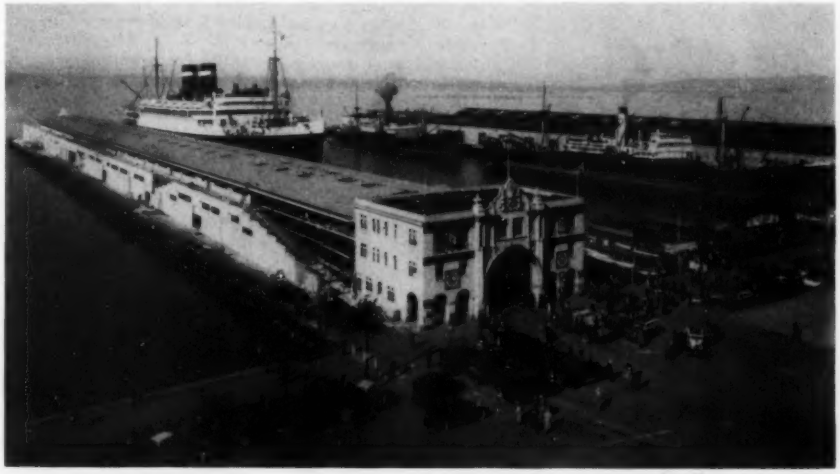
CARTRIDGE FLASH CAUSES FIRE IN NEW YORK'S NOTED PALACE THEATRE

Delay in Lowering Asbestos Curtain Enables Burning Embers to Sail Into Boxes and Orchestra Pit — Fire Damage Was Slight

By William Jerome Daly

THE flash of a blank cartridge in a 32 calibre revolver used in a vaudeville act, has been blamed for the fire in the Palace Theatre, on Broadway, New York City, the night of February 17. Eight persons were bruised when the 1,000 persons in the audience scampered for exits.

Fire Marshal Thomas P. Brophy, with the aid of Capt. George J. Foster and Lieut. Harry J. Gallagher of the Fire Department's Division of Public Assembly has caused a thorough investigation, during which ten witnesses were subpoenaed to Fire Headquarters and examined. It was impossible to obtain a sample of the burned curtain as it had been completely consumed by the flames. The heat from the fire caused scores of sprinkler heads over the stage to operate. When exit doors were opened by the fleeing audience, the draught caused fragments of the burning curtain to blow over the foot lights and into boxes and orchestra pit where music and musical instruments were burned and the first three rows of orchestra seats on the left side of the house were so badly burned, that new seats were installed next day.



Municipal Pier, San Diego, Cal., to be Used by the I. A. F. C. for Exhibits and Meetings

A popular comedienne billed as "the last of the red hot mammas" was taking a bow when her special orchestra leader silently motioned to her that there was trouble behind her. The north traveler curtain was ablaze. The comedienne wore a dress of sequins on fine net. She fled to the south of the stage. The audience began to move out at the cry of "Fire."

The house holds 1,757 persons seated. The theatre was built in 1913 as a combination office building and show house. There were no violations. The previous fire was in 1919 in an air duct due to a carelessly thrown cigarette. Other fires occurred in 1917, 1915 and 1914. None of them were serious.

The first person to notice the curtain afire was a stage hand, who was holding the north traveler curtain or "close-in." He told the Fire Marshal that he first saw the fire at about knee level. It was traveling up the curtain—no flames, just smoldering. He ran for the hose line on the stage. A fireman assigned to the show house, said he was back stage at the time and ordered the asbestos curtain lowered as burning fragments of the close-in curtain sailed out over the footlights and into the orchestra. The fire alarm box on the stage connected to the N. D. T. System was pulled by the fireman but the public street box was three minutes ahead of it. The fire alarm central office received the street box at 10:09 p.m.

Fire apparatus cluttered Times Square. The fire was out in short order. It was handled by Deputy Chief David J. Kidney, Acting Chief of Department John J. McElligott rolled in later on the preliminary information that the fire was in a theatre.

There was evidently some delay in lowering the asbestos curtain as well as in sounding the alarm from the house box. An usher snapped the handle of the street box.

Fire Marshal Brophy recommended to the Fire Commissioner that the use of pistols for stage work be restricted to prohibit the use of a weapon greater than 25 calibre and that all pistols be discharged at least five feet from any curtain or scenery and that the gun be pointed toward the direction of the floor.

I. A. F. C. OFFICERS PLACE WREATH ON TOMB OF GEORGE WASHINGTON

Honor Memory of First President and Pioneer Volunteer Fireman

ON February 22, Officers of the International Association of Fire Chiefs enroute to the Directors meeting in New York, stopped off at Alexandria, Va., and proceeded to Mount Vernon, the home of George Washington, where a wreath was placed on the tomb of our first president.

Chiefs Brosnan, Duncan and Smith

George Washington, as many histories relate, was actively interested in volunteer Fire Department activities, and was himself a volunteer fireman.

The idea of presenting a wreath originated with Chief James Duncan, Jr., of Alexandria, Va., Fire Department, who suggested it to the officers of the association.

Taking part in the parade and ceremony at Alexandria and Mount Vernon were members of over thirty-eight fire departments, and Chiefs of several of the large cities in the neighborhood of Washington, together

—Photo by J. McInerney

Group of Chiefs on the Historic Grounds of Mt. Vernon

with President D. W. Brosnan, and Vice-President Richard Lee Smith of the International Association of Fire Chiefs.

Others prominent in the Association affairs who attended the ceremony included Chief George S. Watson, of Washington, D. C., Chief August Emrich of Baltimore, Md., Chief R. A. Foster, Norfolk Navy Yard, Portsmouth, Va., Chief P. G. Priester of the Baltimore County Fire Department, Chief R. S. Baughan, Norfolk, Va., Chief W. H. Joynes, Richmond, Va., Richard Alexander, Portsmouth, Va., Jesse A. Fisher, Annapolis, Md. and James M. Duncan, Jr., Alexandria, Va.

Local authorities gave a reception and luncheon at the historic Gadsby's Tavern in the afternoon for the guests who took part in the memorial services.

CALLAHAN SUCCEEDS DE MAY AS CHIEF OF DETROIT DEPARTMENT

Former Chief Retires on Advice of Physicians—New Chief Has Long Record in Department

By William Jerome Daly

STEPHEN J. DE MAY, Chief of the Detroit Fire Department since March 1, 1927, retired on a pension March 1, 1932, due to ill health. He has been succeeded by Michael J. Callahan, who was First Assistant Chief. Chief De May had been on the sick list since last October. He has been at Mt. Clemens for a few weeks and his physicians say that out of the Fire Deuartment he has a chance to enjoy life for some time to come, but as Fire Chief of Detroit he was shortening his life.

Announcement of Chief De May's retirement was made February 15, his sixty-ninth birthday anniversary. The Fire Commission held a meeting and immediately promoted Assistant Chief Callahan to the post. Chief Callahan is sixty-seven years and has been in the Detroit Fire Department forty-four years.

Chief Callahan was born in Erin, Macomb County, Mich. At the age of twenty-two years he was appointed a substitute fireman June 6, 1887. He became a Lieutenant in eight years, a Captain ten years thereafter, Battalion Chief

Ex-Chief Stephen J. De May

Chief Michael J. Callahan

twelve years later (July 1, 1917), Second Assistant Chief August 1, 1925, First Assistant Chief March 1, 1927.

Chief Callahan typifies the last of the old school of Detroit flame fighters. He was the first man to be given a permanent position after the volunteer brigade was mustered out of service in 1887. He is the ninth fire chief of the motor city department which was organized in 1864. His advancement is predicated on seniority, merit and fitness.

Chief De May is the only living retired Chief of the Detroit Department. He succeeded Edward Megginity, who in turn succeeded Timothy Callahan (not related to the present Chief), but whose son Harry is chief officer in charge of the drill school. Chief De May had the respect and affection of the Board of Fire Commissioners, and particularly of his subordinates. His quiet and unassuming manner was often misinterpreted for sluggishness or slowness. A gentleman to his finger tips, Chief De May was ever a decorous person even during the stress of an exciting fire. His handling of the fatal and disastrous fire in the large plant of the Briggs Manufacturing Company, makers of automobile bodies, soon after he became Chief of Department, did more than any-

thing else to demonstrate his capacity, judgment and leadership.

The writer recalls attending a meeting of the Board of Fire Commissioners a few years ago as a guest of the members of the Board. The question of purchasing hose came up. It was provoked by a letter from a City Councilman urging economy in that commodity. Chief De May made the following observation: "Please, gentlemen, whatever else you might save money on, don't for Heaven's sake try to save it on hose. That's one article that should be the best that money can buy. This department gives us everything else that is good. We have good apparatus, good tools, good equipment and good men. Hose above all other considerations should be the best. Any Fire Department is only as efficient and as reliable as its hose."

Newly Elected Chiefs

The following have been elected to head the Fire Departments in their respective municipalities:

Wyoming, Ia.—W. N. Morse.
Grangeville, Ida.—Mark Robinson.
Calumet, Minn.—Ed McCormick.
Grundy Center, Ia.—Arthur Hasbrouck.
Vermilion, Ohio—W. A. Tischer.
Benson, Minn.—T. K. Lee.
Weimar, Tex.—Henry Seifert.
Harlan, Ia.—Elmer Potter.
Anderson, Cal.—Henry Huffman.
Winnebago, Neb.—Frank Robertson.
Geddes, S. D.—William Biehl.
Garner, Ia.—M. N. Zeigler.
Wesley, Ia.—L. L. Lease.
Chippewa Lake, Ohio—D. D. Tanner.
Tampico, Ill.—Wayne Elmendorf.
Milford, Ia.—R. B. Nicol.
Shell Rock, Ia.—Keith Stevenson.
Waynesburg, Pa.—Frank L. Hoover.
Iron River, Wis.—George Dargie.
Nashua, Ia.—W. C. Reif.
Perry, Ia.—Harry Timeon.
Linwood, N. J.—John Pedrick.
East Northport, N. Y.—Henry Kohler.
Poland, N. Y.—H. L. Prentiss.
Potter, Wis.—Oscar Kasper.
Iola, Wis.—C. W. Parks.
Monroe, Wash.—L. M. Mains.
Waverly, Ia.—Carl Homan.
Tripp, S. D.—George Wiedderrich.
Miami, Ariz.—M. A. Graham.
Arlington, Ky.—Raymond McGary.
Aliquippa, Pa.—C. B. Ransom.
Rio, Wis.—William Klawes.
Apple River, Ill.—Frank M. Winans.
La Grange, Ind.—M. E. Fisher.
Carlinville, Ill.—Joe Wetzel.
Wausaukee, Wis.—W. A. Howard.
Whitehall, Wis.—Charles Schilke.
Appleton, Minn.—Ralph Long.
Cumberland, Wis.—L. A. Reese.
Fayette, Ia.—Ray Beiles.
Turtle Lake, Wis.—James Gaffney.
Cathay, N. D.—R. B. Milne.
Kensal, N. D.—A. J. Thompson.
Seaford, Del.—C. B. Favinger.
Forest Junction, Wis.—A. A. Jansch.
Logan, Ia.—M. O. Harrison.
Girard, Kan.—W. S. Hutch.
Laurium, Mich.—Gust Prouss.
Bingham, Utah—John Creedon
Cashton, Wis.—H. B. Bohl
Ossian, Ind.—R. N. Hoover
Blue Earth, Minn.—William Schandel
Marlton, N. J.—Harry Ross
East Marion, N. Y.—Chester Ketcham
Jenkintown, Pa.—William Norton

Eastern Association to Meet in May

A meeting of the Board of Officers of the Eastern Association of Fire Chiefs was held at the Pennsylvania Hotel, New York City, on February 11 to make plans for the fifth annual convention which will be held at the DuPont-Biltmore Hotel, Wilmington, Del., May 27 and 28.

The following were present at the Board meeting: Chief Charles W. Greenfield, Arlington, N. J., President; Chief Ross B. Davis, Philadelphia, First Vice-President; Deputy Chief John J. T. Waldron, New York Fire Department, Second Vice-President; Ex-Chief John J. Kenlon, New York City, Chairman of the Board of Directors; Chief William J. Lutz, Wilmington, Del.; Chief Harry Francis, New Brunswick, N. J.; Chief R. L. Smith, Pittsburgh, Pa., Treasurer, and F. E. Soulé, Fire Marshal, Coatesville, Pa., Secretary.

Capt. John J. Conway Dead

Captain John J. Conway, Superintendent of the Underwriters' Salvage Corps in Cincinnati, Ohio, died at his home recently, from abdominal trouble. He underwent an operation in September but showed no improvement. He was seventy-three years old.

He was born in Cincinnati, November 28, 1858, and left school at an early age to work on a farm. About fifty years ago he entered the fire service as a substitute fireman and in the early 90's joined the Salvage Corps. In 1925 he was given a testimonial dinner, a purse of $1,000 and a three months' vacation with pay.

Captain Conway is survived by a widow, a son and two daughters.

Kansas City, Mo., is to place an order for four pieces of fire apparatus including a 1,000-gallon pumper, a 75-foot aerial ladder and a squad car. Bids have been opened but no decision has been made.

Rhode Island Chiefs Meet

Governor Norman S. Case of Rhode Island was one of the speakers at the fourth annual banquet of the Fire Chiefs' Club of Rhode Island held in Narragansett Hotel, Providence, R. I., February 25. Chief Frank Charlesworth of Providence was toastmaster. There were five hundred persons, including Chiefs, state and town officials, and residents of Massachustts and Connecticut.

Lieut. Gov. Connolly inducted the following men into office: Chief Frank Charlesworth, Providence, President; Augustin J. Cote, Woonsocket, First Vice-President; Elmer R. Capwell, Anthony, Second Vice-President; Ex-Chief A. Robert Black, North Providence, Secretary; Ex-Chief Arthur J. Bellinge, Norwood, Treasurer; Board of Directors, Eugene Parenteau, West Warwick, Deputy Chief John H. Fischer, Providence, Charles E. Rounds, Warren; Rev. Norris T. Morton, Providence, Chaplain.

Prizes and souveneurs wre distributed, and entertainment provided. A badge, appropriate for the office, was presented to Chaplain Morton.

At the March meeting of the club, it is expected that the Legislative Committee will report on an act to require towns of the state, not having an incorporated fire district, to appropriate a certain percentage of its tax revenue for fire protection. A bill has been drawn to pay a yearly amount to widows and orphans of firemen killed in line of duty.

British Columbia Chiefs to Meet

Many interesting papers will be presented at the annual convention of the British Columbia Fire Chiefs' Association which will be held in New Westminister, B. C., Canada, May 3-6.

R. Nixon, First Aid Instructor, New Westminister Fire Department will speak on "First Aid in the Fire Department. Other papers to be presented are:

"Care of Hose," by Chief A. A. Macdonald, Trail.
"Irrespirable Gases—Their Characteristics and the Use of Masks," by Chief R. Crawford, Fernie.
"The Vancouver Drill School and its Lessons," by Fireman E. Price, Fernie.
"Keeping Up Interest in the Volunteer Department," by Assistant Chief Bristow, Kamloops.
"Gathering and Presenting Evidence for an Inquiry," by Deputy Fire Marshal Walker, Provincial Fire Marshal Staff.
"Projection Machine and Film Hazards (with Demonstration), by Deputy Fire Marshal Oswald, Provincial Fire Marshal Staff.
"The Fire Underwriters Association and Its Relationship to Fire Departments," by John H. Noble, Manager, British Columbia Underwriters Association.
"The Fire Marshal Act of British Columbia and Its Amendments," by Fire Marshal J. A. Thomas.
"Modern Fire Protection," by Chief C. W. Thompson, Vancouver.

In addition to the papers, there will be contests of teams from paid and volunteer Fire Departments in first aid work. Trophies have been donated by H. H. Sanderson of the Sanderson Safety Supply Company, Seattle, Wash.

Kentucky Firemen's Association Formed

An organization known as the Southeastern Kentucky Municipal League and Firemen's Association has been formed with Dr. L. O. Smith, Mayor of Harlan, President.

With the exception of two cities that are members, reports were received that local ordinances have been passed for answering second and third alarm fires in nearby towns. This makes it possible to have a mutual aid system without the formality of getting the Mayor's approval each time it became necessary to take apparatus beyond the corporate limits. The immediate purpose of this association was the plan for mutual aid.

Officers are Dr. L. O. Smith, Mayor of Harlan, President; Dr. J. M. Brooks, Mayor of Pineville, and Russeel Dyche, Chief of London, Vice-Presidents; P. T. Cairns, City Clerk of Pineville, Secretary-Treasurer.

The next meeting is to be held in Harlan on March 11.

The forty-eighth annual parade of the Kings County Volunteer Firemen's Association was held in Brooklyn, N. Y., on Washington's Birthday. Units were present from New Jersey, Long Island and from Westchester and Putnam Counties. William H. Todd, who has been active in volunteer firemen's circles for forty-five years and who has attended these parades for more than twenty years, was absent due to illness.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Utilizing Sprinkler Equipment

To the Editor:

The influence of your magazine is too important to let your answer appearing in the February, 1932, issue under the heading of "Questions and Answers," go by unchallenged. It is our experience that fire departments are not taking advantage of the effectiveness of automatic sprinklers in extinguishing fires.

The building in question is, without doubt, open joist construction which would require approximately 80 sprinkler heads per floor. Unless the sprinkler equipment was shut off the fire described should not open more than one-fourth of the heads on each floor, these being the ones immediately around the elevator shaft. For the sake of discussion we are assuming that about 40 heads were opened. Sprinklers are doing effective work when delivering about 20 g.p.m., which requires a pressure of about 12 lbs. in the cross main supplying the head. This would require a supply of about 800 g.p.m.

A typical water works system with 50 lbs. static pressure would deliver (deductions made for losses in sprinkler connections and fittings) on the third floor of the building between 800 and 900 g.p.m. It is reasonable to assume that the major portion of the water available was being discharged by the sprinklers.

Should the fire department hook up a pumper to a hydrant and take the capacity of the pump, 750 g.p.m., from the mains, immediately the pressure in the mains would be reduced, thereby taking the supply away from the automatic sprinklers.

The point in the above brief discussion is that the fire department would have done more effective work by hooking up their pumper to the sprinkler fire department connection, and then supplying the sprinklers with all the water the pumper would deliver. By this means the water would be discharged directly on the fire through the sprinkler head. These would have found the fire a long time before the fire department could locate it in the smoke filled building. The fire department could then enter the building, ventilate same, and determine whether the sprinklers had extinguished all of the fire.

Usually there are only two outlets on the sprinkler fire department connection. Two lines of hose could have been laid from the pumper to this connection, and the third line could have been used by the fire department to extinguish any portion of the fire which had not been extinguished by the discharge from the sprinklers.

Modern practice in sprinkler installation, where there is only one sprinkler riser in the building, is to connect the fire department engine connection into the system above the dry pipe or wet alarm valve. Assuming that the sprinklers had been shut off from their source of supply, water from the engine would have been placed directly on the fire because of the fact that the heat would have opened the heads in the immediate vicinity of same.

In the modern automatic sprinkler system the fire department has an excellent instrument of fire extinguishment. It seems desirable that the fire department lay aside the old time prejudice against automatic sprinklers and give some thought to the valuable use which could be made of them.

Yours very truly,

FRANK R. DANIEL,
Chief Engineer, Fire Insurance Rating Bureau,
Milwaukee, Wis.

Nozzle Reaction

To the Editor:

Will you please settle the following disagreement which has arisen among the members of our fire company. We have 60 pounds pressure at hydrant, 500 gallon pumper hooked to it, 130 pounds pump pressure, 2 lines of hose, each line 200 ft. long. On one line we have 1⅛-inch nozzle, on other line ¾-inch nozzle. Which line would have more back pressure, and therefore be harder for the men to hold? Please explain why.

W. C. J.

Answer: To determine the reaction of a nozzle it is necessary to know the pressure at the nozzle. Therefore the pressures on the ¾" and 1⅛" nozzles will be first determined.

N.P. = E.P. ÷ (1.1 + K L), where K is a factor depending upon the diameter of the nozzle and the diameter of the hose; L, the number of 50 foot lengths of hose in the line.

Considering first the line with the 1⅛" nozzle,

N.P. = E.P. ÷ (1.1 + K L)
= 130 ÷ (1.1 + .167 x 4)
= 130 ÷ (1.1 + .668)
= 130 ÷ 1.768 = 73.6 pounds.

Considering the line with the ¾ inch nozzle,

N.P. = 130 ÷ (1.1 + .1264)
= 130 ÷ 1.2264
= 106 pounds.

The reaction of nozzle when discharging a stream equals 1.5 d^2p, where "d" is the nozzle diameter in inches and "p," the pressure in pounds per square inch.

The reaction on the ⅛" nozzle = 1.5 x 1⅛ x 1⅛ x 73.6 = 140 pounds approximately.

The reaction on the ¾" nozzle is 1.5 x ¾ x ¾ x 106 = 89.5 pounds.

By comparing these two figures, it will be noted that the reaction on the 1⅛" nozzle is over 1½ times that of the ¾ inch nozzle. Hence it safe to say that it would be more difficult to handle the 1⅛" nozzle than the ¾ inch.

Static and Flow Pressures

To the Editor:

Will you please give me the correct method of obtaining hydrant pressure?

A gauge or indicator placed on a hydrant with no water passing through shows far more pressure than a stream which is being taken from it. This seems to be especially true on dead ends and long mains of comparatively small diameter.

Answer: The explanation of the difference in recorded pressures when water is flowing and at rest in the hydrant lies in the friction loss experienced by water in motion.

When water is at rest, pressure is the same at all points if the system is horizontal. In other words, the pressures in two hydrants at exactly the same level will be the same, as long as there is no flow in the pipe line. But the moment

flow starts, then friction loss takes place and the pressure drops. For example, if the pressure in a hydrant which is not flowing is 50 pounds, and the hydrant is then opened up, permitting a heavy flow, the pressure may drop down to 10 pounds. In this case, the friction loss is 40 pounds.

The friction loss depends upon the length of pipe line supplying the hydrant as well as upon its diameter, the smaller the diameter, the greater the friction loss.

JOHN J. McELLIGOTT APPOINTED CHIEF OF N. Y. FIRE DEPARTMENT

Promotion Became Effective on March 1—Previously in Charge of the Marine Division — Entered Department in 1905

By Wm. Jerome Daly

JOHN J. McELLIGOTT is the new Chief of the New York Fire Department. Having attained the highest final average on the civil service eligible list containing eight other names out of twenty-three Deputy Chiefs who competed in the test on January 20, 21 and 22 last, he was promoted by Fire Commissioner John J. Dorman effective March 1 to succeed John Kenlon, who retired on his own application at full pay $12,500 on March 4, 1931.

Chief J. J. McElligott

As forecast in the February issue of FIRE ENGINEERING, the Municipal Civil Service Commission fulfilled its pledge to dispose of the task of rating the papers before the end of February. The Commission made the announcement of the promulgation of the new eligible list on February 24.

It was necessary to attain a final average of 80% to qualify. The medical examination was held Monday morning February 29. McElligott passed with ease. He stands 6 feet and one inch, weighs 196 and appears to be in the best of physical trim.

Chief McElligott was promoted to the rank of Chief of Department on Tuesday March 1. In a setting banked with numerous and huge floral pieces sent by friends and comrades, he was handed his certificate of office by Fire Commissioner John J. Dorman. The promotion was made in the presence of former Fire Chief John Kenlon, Deputy Fire Commissioners Hannon and Kenny and Assistant Chief Thomas F. Dougherty. Chief McElligott's wife, two sons and daughter were present as were hundreds of friends.

Mayor Walker personally sent for the Chief to come to City Hall where the Mayor felicitated him upon his promotion.

At the ceremonies in Fire Headquarters Chief McElligott was the object of many expressions of good will and affection. Fire Commissioner Dorman said:

"Chief McElligott, as you know, you were certified by the Civil Service Commission as number one on a list of eligibles for appointment to fill the vacancy of Chief of Department.

"I understand that this examination was a severe test, and any Deputy Chief who made the list may well feel proud of his accomplishment. That you have succeeded in receiving the highest rating, redounds to your lasting credit.

"I congratulate you most heartily upon your promotion, and from my knowledge of the officers and members of the Uniformed Force, assure you that they will show the same courage in the performance of their duty and the same loyalty to you as their commander, as they have invariably shown in the past."

Chief McElligott responded:

"Mr. Commissioner, it is very gratifying, indeed, to hear you speak as you do.

"I hope and trust that God will give me the health, the foresight and the perseverance to measure up to that which is expected of me as Chief. With a profound realization of the importance of the position and the tremendous responsibilities devolving upon the Chief of New York's Fire Department, I prefer to let the results of my administration of this high office speak for me, in the hope that they may prove to be more eloquent than any mere words of mine at this time.

"Even my esteemed predecessor, Chief Kenlon himself, could not have been as successful as he was without cooperation. In that respect I can hope to be no different than he. For without the whole-hearted, loyal support of my comrades, the officers and members of the Force, and of you, too, Mr. Commissioner, and your Deputy Commissioners, my administration as Chief cannot be successful.

Former Fire Chief Kenlon said:

"It seems to me that congratulations on this splendid occasion are first due the people of the City of New York. Right here and now I would like to assure them that from my knowledge of John J. McElligott, he is all that they think and hope he is. I had an exceptional opportunity to judge this young man. He was trained under my very eyes and I know of no man better qualified for this important post of public duty."

The deputy chiefs who succeeded in capturing the first four places on the eligible list (which is good for four years only) are:

	FA	ADM	L&O	REP	MEN	REC
J. J. McElligott	87.08	85.00	69.00	92.00	82.16	92.00
J. W. Heffernan	86.37	78.00	77.00	81.00	78.25	94.50
Henry B. Helm	86.12	78.00	69.00	87.00	77.25	95.00
J. J. T. Waldron	84.12	75.00	79.00	81.00	77.00	91.25

FA—final average; ADM—administration; L&O—laws and ordinances; REP—report; MEN—mental average; REC—record and seniority.

The questions were published in the February issue of FIRE ENGINEERING. The technical subjects were rated by the engineers of the National Board of Fire Underwriters.

The selection of Chief McElligott proved to be a most popular one especially among the blueshirted firemen, although most of his competitors in the examination were among the first to congratulate him when the news broke announcing the names on the eligible list.

Chief McElligott is forty-eight years of age; native born of Irish parents (County Limerick) and in his youth was a clerk, stenographer and a bit of telegrapher too. He attended for a time the University of Syracuse but being a fidget, he didn't wait to finish. He entered the Fire Department, November 10, 1905 and was assigned to 8 Truck in the lower west side warehouse and waterfront district. January 1, 1910 he was engineer of steamer, Engine 25 and Engine 6. In the latter place he got "first water" on the fatal Equitable Building fire of 1912 where he, with others, did thirty-six hours duty. In 1913 he was promoted to Lieutenant and assigned to his original company H. & L. 8. Sixteen months later he was promoted to Captain and assigned to H. & L. 1 in Duane street. In 1915 Chief Kenlon drafted McElligott to organize the first Rescue Company

New York City Appoints a New Fire Chief

From left to right, Chief John J. McElligott, advanced to head of the department, Fire Commissioner John J. Dorman and John Kenlon who retired as Chief.

and to school the members in the technical and intricate work of that unit.

While in Rescue Co. 1 the work made inroads on his health, especially the fumes developed on the occasion of a fire in Park & Tilford's store at Columbus Avenue and 72nd Street. He contracted pneumonia and to give him a chance to recuperate, Chief Kenlon assigned him to the fireboat George B. McClellan. There in conjunction with his work he studied navigation and by the time he was reached on the eligible list for Battalion Chief he had a master navigator's license.

April 16, 1922, he became a Battalion Chief and was assigned to the 4th District, which embraces the Ghetto of the lower East Side—an old-law tenement district where the running and the fires were fast and furious. On October 20, 1925, he was promoted to Deputy Chief of Department and, because of his marine and engineering knowledge, was assigned in charge of the Marine Division, succeeding Edward J. Worth.

In the marine post he made himself officially conspicuous, particularly in his efforts to build up and improve the fireboat fleet. He strongly advocated and for over a year succeeded in obtaining on approval radio telephony on two of the fireboats. These experimental sets have since been withdrawn for lack of city funds with which to install them.

He attracted considerable attention by his handling of the fatal fire aboard a transatlantic steamer moored at Morton street. Fire and explosion sank the vessel. The pilot of a fireboat was killed and an electrician in the crew of the steamer was suffocated below.

When Assistant Chief Joseph B. Martin fell ill in the Spring of 1930, Chief McElligott was designated to substitute for him on fire duty as well as the department's representative on the Board of Standards and Appeals—the appellate body to which all petitions for relief are taken from administrative orders of the fire, building and tenement house departments.

Upon Chief Martin's retirement in the Fall of 1930, Chief McElligott was designated Assistant Chief of Department, and relieved of his command of the Marine Division. Assistant Chief in the New York Department is a staff title only and carries no weight in competition for promotion from Deputy Chief to Chief of Department. During the long period of Chief Kenlon's illness, the fire extinguishment branch of the department was carried by Assistant Chief Thomas F. Dougherty in conjunction with Assistant Chief McElligott as relief.

Chief Donovan of Kansas City, Mo., Dead

Daniel F. Donovan, Chief of the Kansas City, Mo., Fire Department since September 1, 1927, died at his home on February 4 at the age of sixty-five.

He joined the Fire Department on June 4, 1886, and was promoted to Third Assistant Chief, June 21, 1900. He was advanced to Second Assistant Chief on April 21, 1902 and to First Assistant Chief, May 8, 1918. Nine years later Chief Donovan was made head of the department. He succeeded Chief Alex Henderson.

The Directors of the Chamber of Commerce stated in a resolution that was sent to the late Chief's family:

"Chief Donovan served in the Fire Department forty-five years, the last four years as chief. He was known for his fearlessness and unselfishness to the department. The effectiveness of his efforts to make his city safe from fire can best be measured by the steady decline of fire losses under his leadership, reaching the lowest per capita level in 1931 that the city has experienced in twenty-four years."

Chief Donovan was unmarried, and lived with three sisters.

Los Angeles Department Extends Courtesies

Chief Ralph J. Scott of the Los Angeles Fire Department, on behalf of the officers and men, has asked that all members of the fire-fighting fraternity who contemplate attending the Olympic Games which will be held in Los Angeles in August, should make themselves known at department headquarters or at any of the fire stations in the city. Department officials are looking forward to these meetings and they hope that they will be of possible assistance to such visitors.

L. G. Combs, President of the Los Angeles Fire Fighters Association has also expressed a desire to look after the comfort of visiting firemen.

A firemen's school has been established in the Central Station of the Bangor, Me., Fire Department.

35-MILE GALE SPREADS FIRE IN TWO BALTIMORE LUMBER YARDS

Chief Emrich and His Assistants Prevented a Conflagration in Baltimore — Many Burning Embers Fell Distance From Fire

EIGHT alarms were turned in for a fire which destroyed two lumber yards in Baltimore, Md., on January 27, with an estimated loss of $175,000. Fifty-eight pieces of apparatus were called and two fireboats. The men were in command of Chief August Emrich, two Deputy Chiefs and Eight Battalion Chiefs.

Fire was discovered by a watchman of the Otto Duker Lumber Company at 1:23 p.m. An alarm was sounded at once bringing three engine companies, one truck company, five hose companies and a deputy and a battalion chief. When the first alarm companies arrived, the flames which were fanned by a thirty-five-mile wind, had spread rapidly through the lumber yard. Fire spread so rapidly that other alarms were sounded in rapid succession—the second at 1:31, third at 1:32, fourth at 1:34, fifth at 1:35, sixth at 1:37, seventh at 1:39 and the eighth at 1:40. Two fireboats responded on the fourth alarm.

Residents who lived near the lumber yard attached garden hose to outside connections and began to wet down the roofs of their houses, and the wooden fences that separated the homes from the lumber yard alley.

Many Streams Were Played on the Baltimore Fire

Note the large amount of hose used and the flimsy construction of buildings in the immediate neighborhood.

As the flames reached the Albermale Street end of the Duker lumber yard, they leaped over to the brick office building of the MacLea Lumber Company. This soon became completely involved. Sparks fell on piles of lumber in the MacLea yard and firemen were kept busy hurling burning planks and drenching the stacks to prevent the blaze from further advances. Sparks were also carried to the Heise & Bruns Mill & Lumber Company but this fire was quickly brought under control.

Flying embers set fire to loose straw in a number of empty freight cars of the Pennsylvania Railroad.

Fire spread so rapidly that many persons in nearby houses, collected whatever personal property they could, so that it could be moved at a moment's notice.

The response to the various alarms was as follows: Second alarm, four engine companies, two truck companies and a water tower; third, three engine companies; fourth, seven engine companies, four truck companies, two hose company, one water tower, one chemical and two fireboats; fifth, four engine companies; sixth, eight engine companies and two truck companies; seventh, four engine and two truck companies, and the eighth, eight engine companies.

Chief August Emrich in command of the companies, said:

"Upon my arrival after the third alarm, I found the Duker lumber yard considerably involved, and fire extending to the MacLea Lumber Company yards across the street. Apparatus was in service and additional companies responding were placed as to head off the fire which was extending rapidly due to a thirty-five mile wind blowing at the time. Fire was surrounded and extinguished as quickly as possible under the circumstances.

"It looked to me as if we were certainly up against a conflagration breeder, but due to the excellent efforts and service rendered by the men and equipment, it was cut off and promptly disposed of. The men suffered severely from the heat and burns received during the struggle. We had a number of pieces of fire apparatus scorched and we lost about seven hundred feet of hose."

After the fire had been brought under control, Chief Emrich stationed apparatus in the streets for two miles east of the ruins. So many embers had been hurled into the air and landed on roofs that it was feared that flames would spread into the thickly populated Italian section where the streets are narrow.

Every Fire Department ambulance and a number of police patrols sped to the scene when it was feared that the fire would get out of control.

Streets of Baltimore resounded on that day with more din of fire apparatus than at any other time since the long-remembered conflagration of 1904.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designating in the headings. These figures, compiled from telegraphic reports are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending February 29	Loss in Thousands of Dollars
MARION, S. C.—Business and residential property	80
TICONDEROGA, N. Y.—Raptis building damaged	50
BENTON, KAN.—Several business establishments destroyed	25
SHELBY, MICH.—Cannery of Great Lakes Fruit Industries, Inc.	35
MAYVILLE, N. Y.—Four business buildings damaged	200
HARTFORD, CONN.—Building of Herrups Furniture Co.	250
BALTIMORE, MD.—Plant of H. P. Duker Lumber Co.	100
URBAN, IOWA—Hardware and grocery stores destroyed	25
McGREGOR, TEX.—Property of Planters Cotton Oil Co.	100
EDMONTON, ALTA.—Several business buildings damaged	100
N. PLYMOUTH, MASS.—M. S. Shwon dept. store damaged	30
CHICAGO, ILL.—Continental Airways hangar at Municipal Airport.	150
PEACE RIVER, ALTA.—Boyd Theatre, adj. property	65
BARNSBORO, PA.—Plant of Barnsboro Lumber Co., two dwellings	35
STAMFORD, CONN.—Synagogue of Congregation Augudas Sholem	25
ANSONIA, CONN.—Tremont Theatre bldg. damaged	25
SYRACUSE, N. Y.—Orange Restaurant, adj. bldg., Marshall St.	40
SIGURD, UTAH—Plant of Jumbo Plaster & Cement Co.	200
SIOUX CITY, UTAH—Bldg. of Olsen Sporting Goods Co.	45
CANTON, OHIO—Dwelling of E. A. Langenbach, Congress Lake	80
ELROY, WIS.—Farm home of Amos Teed destroyed	25
BATTLE CREEK, IOWA—Plant of Miller Lumber Co.	25
STATE COLLEGE, PA.—Odd Fellows building and adj. church	45
PORTLAND, ME.—Shurtleff Co. whse on Union Wharf	30
HAGERSTOWN, MD.—Property of Lowry Produce Co. and Western Md. R. R. Co.	25
OTTAWA, ILL.—Orpheum Theatre bldg., Peoples Trust & Savings Bank bldg.	200
MODESTO, CALIF.—Murray Jones store and apartment building	25
OTTAWA, KAN.—Cohen store and adj. property	50
THERMOPOLIS, WYO.—Washakie Hotel in Hot Springs Park	80
DETROIT, MICH.—Plant of American Nut Co. damaged	150
MAGRATH, ALTA.—Hillmer block damaged	25
CHICAGO, ILL.—Plant of Kaplan, Inc., damaged	125
PELLSTON, MICH.—High school and grade school destroyed	30
WILMINGTON, DEL.—Hangar and several planes of H. B. du Pont, on Lancaster Pike	50
EDINBURG, IND.—Property occupied by J. C. Wellman and H. I. Cutsinger	125
CHICAGO, ILL.—Golden Lily restaurant damaged, Garfield Blvd.	25
CHARLOTTE, N. C.—Property of Caroline Auto Supply Co.	65
SANDUSKY, OHIO—Fishery of Lay Bros. destroyed	80
CORNING, ARK.—Singleton bldg. damaged	25
FULTON, IND.—Office of Fulton "Leader," adj. property	25
HAMMOND, IND.—Business block damaged	25
VULVAN, ALTA.—Buick & Howson store destroyed	25
MORGAN CITY, LA.—McClellan Drug store, other adj. property	25
PEKIN, ILL.—Plant of Pekin Statuary Art Co.	25
HULL, IOWA—Iowa State Bank bldg., other property	25
MARSHALLTOWN, IOWA.—Whse. of Marshalltown Trowel Co.	45
RICHMOND, VA.—Kresge store and Peoples Service Drug store	80
NEWTON, GA.—Several business establishments	25
BOULDER, COLO.—Boulder County Court House destroyed	80
PRATTER, OKLA.—District school house destroyed	25
ATLANTIC CITY, N. J.—Steeplechase Pier destroyed	400
CINCINNATI, OHIO—Residence of C. D. Lauer destroyed	65
NEW WESTMINSTER, B. C.—Factory of Galbraith, Ltd., adj. bldg.	125
NORTHBRIDGE, MASS.—Center Congregational Church destroyed	25
FORT EDWARD, N. Y.—Camale grocery and apartments destroyed	25
EDGEMERE, N. Y.—Property of Howe Bathing Pavilion	25
CARTERSVILLE, GA.—Walton bldg., destroyed	25
RYE, N. H.—Wedgewood Junior High School destroyed	30
SAVANNAH, MO.—Public school bldg. destroyed	50
NEWTONVILLE, N. Y.—Residence of L. T. Broeck, Fidlers Lane	25
CUMBERLAND, B. C.—Five buildings in business district	125
UTICA, N. Y.—Amlott apartments damaged	80
GRENADA, MISS.—Grenada hospital base destroyed	25
WEAUBLEAU, MO.—High school bldg. destroyed	25
WELCH, OKLA.—Welch high school bldg. destroyed	35
SKAGWAY, ALASKA—Shops of White Pass & Yukon R. R.	150
TALLULAH, LA.—Two stores destroyed	35
PLYMOUTH, N. H.—Howe bldg., owned by F. W. Brown	65
POINT PLEASANT, N. J.—High school bldg. destroyed	30
WAUPACA, WIS.—Business property damaged	45
CANASTOTA, N. Y.—Factory of Lee Manufacturing Co.	45
HAWTHORNE, N. Y.—St. Hyacinth's R. C. school destroyed	50
WAUKEAGAN, ILL.—Generating plant of Public Service Co. of No. Illinois	150
EVELETH, MINN.—Business property owned by Mrs. S. Sax	45
MONTGOMERY, TEX.—Three stores destroyed	25
TAZEWELL, TENN.—Big Four warehouse destroyed	25
IDA GROVE, IOWA—Business property damaged	65
OMAHA, NEB.—Business property at 1308-10 Harney St. damaged	100
IOWA CITY, IOWA—Hawks Next Cafe, Miss E. Harbat, owner	25
LAKOTA, N. DAK.—Kane Public School bldg. destroyed	80
IDAHO FALLS, IDAHO—Gayety Theatre, adj. property	80
JACKSON, TENN.—State Theatre and Martin Drug Store	160
VAN BUREN, ME.—Hammond House Hotel destroyed	30
ALEXANDRIA, LA.—Auto Tire Co. storage dept. destroyed	45
SHERBROOKE, QUE.—Property of Brompton Pulp & Paper Co., 35 mi. from here	250
HIGH POINT, N. C.—Factory of Giant Furniture Mfg. Co.	125
JOHNSON CITY, N. Y.—Clothing store of Samuel Lesser	25
SMITHFIELD, N. C.—Four business establishments damaged	45
OSHKOSH, WIS.—Business bldg. at 269-71 Main St. damaged	65
QUINCY, MASS.—Block in City Square owned by Adams estate	45
SIREN, WIS.—Business district destroyed	80
MARIETTA, OHIO—Equipment plant of American Supply Co., adj. property	160
STAFFORD, TEX.—Four business establishments destroyed	35
BIG SPRING, TEX.—Hotel and adj. store bldg. destroyed	65
UNIVERSITY PLACE, NEB.—Plant of Meek Lumber Co. damaged	30
SUGARGROVE, PA.—Five business and apartment bldgs.	45
NORTH BEND, OHIO—North Bend Inn destroyed, half mi. west	40
SECAUCUS, N. J.—Hudson County Hospital at Laurel Hill	35
OAKLYN, N. J.—Property owned by Lit Co. on Beechwood Ave.	45
CYRIL, OKLA.—Refinery of Anderson-Prichard Co., damaged	80
JOHNSON CITY, TENN.—Whse. of Tennessee Eastern Elec. Storage	25
PETERSBURG, VA.—Wienberg dept. store destroyed	25
WYANDOTTE, MICH.—Dwelling of J. Tocco, Felice St.	25
LAMAR, S. C.—Several business establishments	45
OTTAWA, ONT.—Business and apt. property at 787-797 Somerset St.	50
PORTLAND, ME.—Paper whse. of Morris Sacknoff	25
NEW WESTMINSTER, B. C.—Several business establishments	25
HACKENSACK, N. J.—Bldg. of Hackensack Paper Stock Co.	45
MEMPHIS, MO.—Three buildings on public square damaged	50
HAHIRA, GA.—High school building destroyed	25
PENSACOLA, FLA.—Residence of Mrs. J. L. Henderson	45
QUEBEC, QUE.—Canac-Marquis Glue factory destroyed	100
MONETTE, ARK.—Public school destroyed	35
ANNAPOLIS, MD.—Severn Country Club, 5 mi. north	25
BRONXVILLE, N. Y.—Grand Union Tea Co. store, Pondfield Rd.	45
ROCHESTER, PA.—Several bldgs. off Brighton Ave.	35
EASTHAMPTON, MASS.—Auditorium of West Boylston Mfg. Co.	75
ELBA, MICH.—Steinman elevator destroyed	25
WILLIAMSPORT, PA.—Fair store destroyed	45
ROUNDUP, MONT.—Several business bldgs. destroyed	80
MIAMI, OKLA.—Childress-Heggem ore mill, 6 mi. north	45
BELOIT, WIS.—Krause Bros. elevators damaged	25
EDMONTON, ALTA.—Corona Hotel, adj. property	350
UNION CITY, PA.—Dwelling of E. A. Shreve, destroyed	25
ERIE, PA.—Penn Neckwear Co. and Duff store destroyed	25

Chief "Bill" Ziegler Cleared of Charges

Chief William Ziegler of Hackensack, N. J., well known at conventions, and without whom no meeting of the New Jersey Association of Fire Chiefs is considered complete, was suspended from office pending outcome of charges resulting from complaints filed by a police captain, spectators, and Chiefs of neighboring volunteer departments, following a paper warehouse fire. The charges were, however, considered unfounded by Hackensack officials and the Chief was exonerated, and reinstated.

During this fire, Chief Ziegler noticed that a wooden pole carrying high tension wires was ablaze. He ordered a stream played on the pole. It is reported that linemen of the Public Service Commission, upon hearing the order, attempted to stop the men from directing their streams on the high tension wires. Some one sought the Police Captain. The police officer ordered the men to cease their work and Chief Ziegler rebuked him.

Another complaint was the improper handling of the extension ladder on the aerial ladder truck. The complaint stated that the Chief allowed the ladder to be used without the ladder resting on the building or other support. It was charged that the ladder was in constant danger of breaking.

The Chief of Little Ferry and Chiefs of other neighboring volunteer departments stated that they were given curt answers by Chief Ziegler when they asked him if he needed help. Chief Ziegler, however, stated that he had not called outside aid for the fire.

At a subsequent hearing, Chief Ziegler was exonerated of all these charges.

Chief Ziegler has been a member of the Hackensack Fire Department for more than fifteen years.

Report on N. Y. Training Schools

The New York State Conference of Mayors and the New York State Fire Chiefs' Association have issued a report on the operation of the eighteen municipal zone fire schools and the school for instructors that were held last year. It presents the comments of a few Chiefs in whose towns the schools were held and it mentions problems for future schools.

CONVENTION DATES

March 11—SOUTHEASTERN KENTUCKY MUNICIPAL LEAGUE AND FIREMEN'S ASSOCIATION. Next Meeting, Harlan, Ky. Secretary-Treasurer, P. T. Cairns, City Clerk, Pineville, Ky.

March 16—FIRE CHIEFS' EMERGENCY PLAN, OF WESTCHESTER COUNTY, N. Y. Monthly meeting, 8 p.m., Fire Headquarters, Stamford, Conn. Secretary-Treasurer, Lieut. E. Riviere, Fire Headquarters, Larchmont, N. Y.

March 17-18—NORTHERN CALIFORNIA FIREMEN'S ASSOCIATION. Next Meeting, Orlando, Cal. Secretary, Assistant Chief H. K. Smith, Redding, Cal.

March 19-20—NORTHERN CALIFORNIA FIREMEN'S ASSOCIATION. Next Meeting, Orlando, Cal. Secretary, Assistant Chief H. K. Smith, Redding, Cal.

April 6—NEW LONDON COUNTY FIRE CHIEFS' ASSOCIATION. Monthly Meeting, Colchester, Conn. Secretary, Herbert P. White, Groton, Conn.

April 12—MAINE FIRE CHIEFS' CLUB. Next Meeting, Bridgeton, Me. Secretary, Charles Bowken, South Paris, Me.

May 3-6—BRITISH COLUMBIA FIRE CHIEFS' ASSOCIATION. 2nd Annual Convention, New Westminster, B. C., Can. Secretary, Assistant Chief DeGraves, Vancouver, B. C., Fire Department.

May 4—NEW LONDON COUNTY FIRE CHIEFS' ASSOCIATION. Monthly meeting, Noank, Conn. Secretary, Herbert P. White, Croton, Conn.

May 9-12—NATIONAL FIRE PROTECTION ASSOCIATION. 36th Annual Meeting, Atlantic City, N. J. Managing Director, Franklin H. Wentworth, 60 Batterymarch St., Boston, Mass.

May 11—DEL-MAR-VA VOLUNTEER FIREMEN'S ASSOCIATION. 3rd Annual Convention, Cape Charles, Va. Secretary, W. A. Karpa, Cape Charles, Va.

May 19—IOWA FIRE CHIEFS' ASSOCIATION. Annual Convention, Ames, Ia. Secretary-Treasurer, Chief L. R. Morris, Ames.

May 21—KEYSTONE FIRE CHIEFS' ASSOCIATION. Next Meeting, Glenside, Pa. Secretary, John V. Nolan, Malvern, Pa.

May 27-28—EASTERN ASSOCIATION OF FIRE CHIEFS. 5th Annual Convention, DuPont-Biltmore Hotel, Wilmington, Del. Secretary, Chief F. E. Soule, Coatesville, Pa.

June—NORTHWESTERN OHIO VOLUNTEER FIREMEN'S ASSOCIATION, 60th Annual Convention, Gibsonburg, Ohio (exact date to be decided later). Secretary, Harry Smith, Supt., Water Works, Port Clinton, Ohio.

June —SOUTHERN CALIFORNIA FIRE CHIEFS' CLUB. Bi-Annual Meeting, Big Bear, Cal. Secretary-Treasurer, Chief Charles E. Smith, Chula Vista, Cal.

June—NORTHERN INDIANA INDUSTRIAL AND VOLUNTEER FIREMEN'S ASSOCIATION. 27th Annual Convention, Columbia City, Ind. Secretary-Treasurer, Hugh Russell, Bluffton, Ind.

June 1-3—OKLAHOMA STATE FIREMEN'S ASSOCIATION. 38th Annual Convention, McAlester, Okla. Secretary-Treasurer, Charles Slemp, 820 East Nineteenth St., Oklahoma City, Okla.

June 6-9—NEW MEXICO STATE FIREMEN'S ASSOCIATION. 10th Annual Convention, Raton, N. M. Secretary-Treasurer, Theodore A. Rosenwald, Albuquerque, N. M.

June 13-15—FLORIDA FIRE COLLEGE. 3rd Fire College, Daytona Beach, Fla. Address, Florida State Firemen's Association, Fire College Committee, Chief Paul D. Joyce, Chairman, Haines City, Fla.

June 13-15—MINNESOTA STATE FIRE DEPARTMENT ASSOCIATION. 60th Annual Convention, River Falls, Minn. Secretary, Fred. Pfaender, New Ulm, Minn.

June 14-15—MICHIGAN STATE FIRE CHIEFS' ASSOCIATION. 7th Annual Convention, Hotel Pantland, Grand Rapids, Mich. Secretary, George F. Dansbury, Grosse Pointe Farms, Mich.

June 21-24—ILLINOIS FIRE COLLEGE, 8th Annual College, University of Illinois, Champaign-Urbana, Ill. Director, Prof. L. H. Provine; Secretary, Asst. Chief Roy W. Alsip, Fire Department, Champaign, Ill.

June 21-24—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 10th Annual Convention, Newport, R. I. Headquarters, Hotel Viking; Meetings and Exhibits, Casino, Newport Beach. Secretary-Treasurer, Chief John W. O'Hearn, Watertown, Mass.

June 22—CENTRAL WESTERN FIREMEN'S ASSOCIATION. (Ohio). Annual Convention, Piqua, Ohio. Secretary, Roger C. O'Donnell, Favorite Theatre Bldg., Covington, Ohio.

June 22-23—INDIANA FIRE CHIEFS' ASSOCIATION. Annual Convention, LaFontaine Hotel, Huntington, Ind. Secretary, Archie McCabe, Muncie, Ind.

July—DOMINION ASSOCIATION OF FIRE CHIEFS. 34th Annual Convention, probably the third week of July, Halifax, N. S. (Exact date to be decided later). Secretary, Chief James Armstrong, Kingston, Ont. Chairman, Exhibit Committee, Chief W. S. Vaughan, St. John, N. B.

July 11-14—MICHIGAN STATE FIREMEN'S ASSOCIATION. 58th Annual Convention, Monroe, Mich. Secretary, H. L. Williams, Luddington, Mich.

July 25-27—CALIFORNIA STATE FIREMEN'S ASSOCIATION. 10th Annual Convention, San Diego, Cal. Secretary-Treasurer, H. E. Strasser, 1171 Tenth Ave., San Diego.

August—VIRGINIA STATE FIREMEN'S ASSOCIATION. 46th Annual Convention, Alexandria, Va. (Exact date to be determined later.) Secretary, O. W. Dabney, Staunton, Va.

Aug. 2-4—INDIANA FIREMEN'S ASSOCIATION. 16th Annual Convention, Columbus, Ind. Secretary, Clem Smith, Post Office Box 520, Terre Haute, Ind.

Aug. 22-25—MONTANA STATE FIREMEN'S ASSOCIATION. 41st Annual Convention and 2nd Firemen's Short Course, Billings, Mont. Secretary-Treasurer, D. E. Moser, Billings, Mont.

Sept. 13-15—ILLINOIS FIREMEN'S ASSOCIATION. 45th Annual Convention, Orlando Hotel, Decatur, Ill. Secretary, Asst. Chief Roy W. Alsip, Fire Department, Champaign, Ill.

Sept. 21-22—NEW CASTLE COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Wilmington, Del.

Oct. 18-21—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 60th Annual Convention, San Diego, Cal. Convention Headquarters, U. S. Grant Hotel; Meeting and Exhibits, San Diego Municipal Pier. Secretary-Treasurer, Ex-Chief James J. Mulcahey, 16 Franklin Avenue, Yonkers, N. Y.; Executive Secretary, Jay W. Stevens, 1014 Merchants' Exchange Bldg., San Francisco, Cal.; Chairman, Exhibit Committee, Chief W. S. Minter, Long Beach, Cal.

Oct. 18-21—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual Convention during Convention of International Association of Fire Chiefs, San Diego, Cal. (Exact date not set.) Secretary-Treasurer, Chief Ray Tiller, Waterloo, Ia.

Oct. 24-26—SOUTHWESTERN ASSOCIATION OF FIRE CHIEFS. 5th Annual Convention, to be held at same time and place as International Association of Fire Chiefs. Secretary-Treasurer, J. F. Taplin, Blackwell, Okla.

HOW TO FIGHT FIRES WHICH INVOLVE CHEMICALS HAZARDS

This Instalment Commences Section Devoted to Poisonous Gases and Deals With Chlorine and Sulphur Dioxide

By Lionel K. Arnold

Assistant Chemical Engineer, Engineering Experiment Station and

Lindon J. Murphy

Municipal Engineer, Engineering Extension Service, Iowa State College

For the accompanying article, the fourth installment of which is published herewith, FIRE ENGINEERING *is indebted to the Official Publication of the Iowa State College of Agriculture and Mechanic Arts, it being comprised in Bulletin No. 9, Engineering Extension Service:*

CHLORINE is a greenish-yellow gas heavier than air and very poisonous but not explosive or flammable. It is used in water works, paper mills, swimming pools and in many chemical factories.

Chlorine is readily detected in the air before it is present in dangerous quantities because of its irritating action on the lungs. However, in even the least quantity detected by odor, or about 4 parts per million, a half hour exposure to it is dangerous. If chlorine is escaping everyone should be kept away and the firemen should work from the windward side above the leak. Water should be turned on the cylinders or tanks to cool them off and if possible upon the leak, as the escaping chlorine frequently cools the water sufficiently to freeze the leak shut. As the leak will usually be through the safety hole from which the fusible plug has been melted, it is frequently possible to close it by driving in a wooden plug, which may be moistened causing it to swell to a tight fit. The man attempting this should be protected with a gas mask. The gas should be disposed of as soon as possible after temporarily closing the leak. If facilities are at hand for running the chlorine into suitable containers or absorbing it in a solution of lime, caustic soda, or soda ash, this should be done. If at all possible any hose or pipe connections and details of absorption should be done by a person accustomed to handling chlorine. If this cannot be done, the cylinders may be removed to an isolated spot and the gas released. Before releasing the gas everyone should be kept at a considerable distance except those equipped with proper gas masks. Remember chlorine is heavier than air so it will flow down to the low land. It will kill vegetation and animals of any sort.

Anyone affected by chlorine should be treated as follows: remove to open air away from the gas; lay on back with head slightly elevated; give a glass of milk or a stimulant; keep quiet; and call a physician.

Sulphur Dioxide

Sulphur Dioxide, SO_2, is a colorless gas commonly formed by burning sulphur. It is shipped in cylinders and tank cars, although where used in large quantities it is usually produced by burning sulphur in special sulphur burners. It is used as a bleaching agent, in fumigation, and as a refrigerant in mechanical refrigerators (usually only in small household units). It is very irritating to eyes and throat, hence it may be detected in concentrations of less than 20 parts per million of air by the coughing it causes. Concentrations up to 100 parts per million are usually not fatal unless exposed for more than one-half hour. Sulphur dioxide is not explosive or flammable. Leaking cylinders of the gas should be plugged and hauled to a dump or the gas absorbed in lime or other alkaline solution. Since it is soluble in water the application of large amounts of water to a fire will reduce the amount somewhat.

(*To be Continued*)

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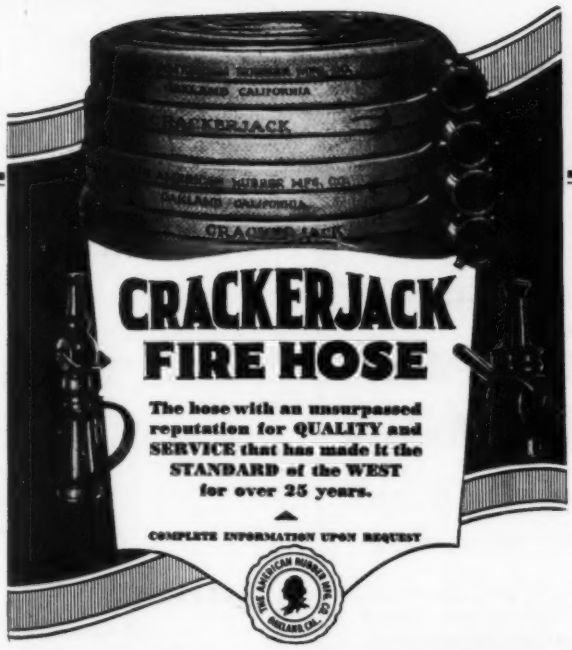
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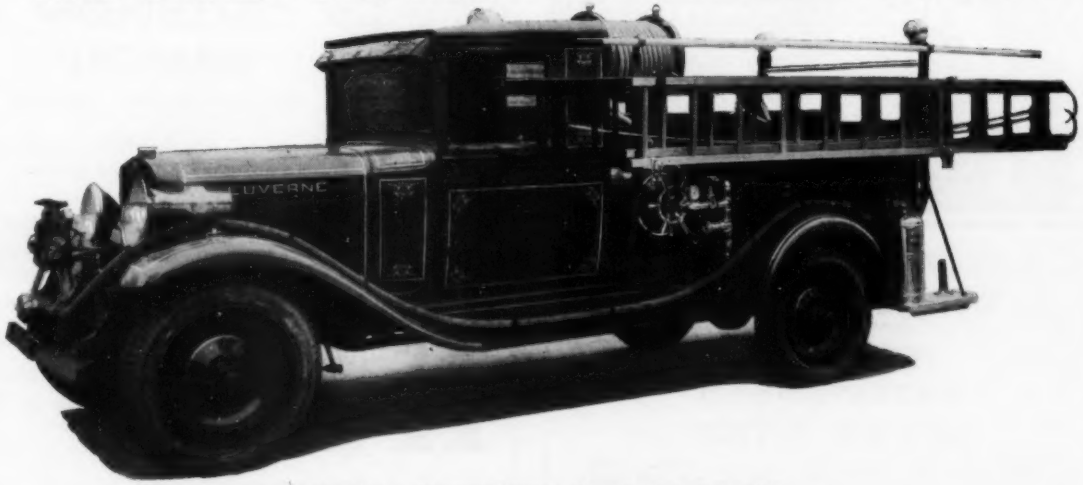

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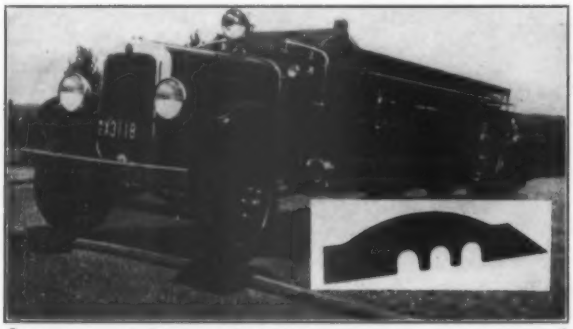

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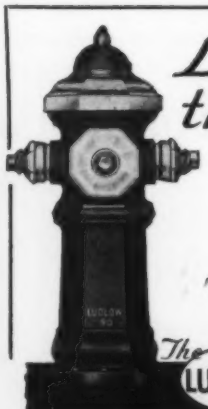

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FIRE DEPARTMENT ACTIVITIES

Chief Emil Kestner, of Lawrenceburg, Ind., was presented with a gold badge by members of Companies 1 and 2.

Minneapolis, Minn., is expecting the delivery of two aerial trucks.

Plans are being made for the Hudson Valley Firemen's Convention which will be held in Beacon, N. Y., in June.

A new fire station has been opened at Seaford Harbor, N. Y.

Ida Grove, Ia., voted not to permit the fire apparatus to make out of town calls.

The City Council of Sioux Falls, S. D., has authorized the purchase of land on which to erect a new fire station.

Farmers in the vicinity of Tiro, Ohio, are considering the community purchase of fire apparatus for rural protection.

Croton, N. Y., is considering the purchase of new fire apparatus to replace an old unit now in service.

Sharon, Wis., has received a Pirsch 500-gallon pumper provided with a 100-gallon booster tank.

English, Ind., has received bids for new fire apparatus. The present apparatus proved inadequate at a serious fire on January 2.

The Fire Department Band of St. Paul, Minn., is scheduled to play at Minnesota State Fire Department Association convention which will be held in River Falls, June 13-15.

Chief Andrew T. Doran, of Turners Falls, has been appointed Chief of the Greenfield, Mass., Fire Department, succeeding Chief Philip Partenheimer.

Due to the freakishly mild weather in New England, within the past two weeks in January, the Quincy, Mass., Fire Department has responded to eighteen alarms for grass fires.

A new fire company, consisting of nineteen members, has been formed in Daly City, Cal. It will be known as Company No. 6.

Officers and members of the Boston Fire Department have made a second contribution of $5,000 to the unemployment fund.

A hoseman of the Bridgeport, Conn., Fire Department fell down a flight of stairs in the fire station, and died two days later as the result of a fractured skull and internal injuries.

Chelsea, Mass., has abandoned Engine 1 house at Pearl and Cross Streets. The personnel of ten men and two officers has been transferred to another station.

A bill has been introduced to increase the number of Battalion Chiefs in Cleveland, Ohio, Fire Department, from twenty-five to twenty-seven.

Fire apparatus and an automobile crashed in Dallas, Tex. The two units were wrecked and six firemen narrowly escaped injury. The motorist was arrested for being negligent.

A truck has been purchased in Los Angeles, Cal., to haul horses to fires, so that the horses may be used for mountain patrol work in the event of a forest fire.

A new fire house was opened in Irvington, N. J., costing $65,000. The station is provided with reserve apparatus taken from other fire stations in town.

A new fire station has been opened in Memphis, Tenn. This building, costing $15,000, is the fourth fire station erected by the present administration.

Primghar, Ia., City Council passed a resolution which prohibits fire apparatus from going to fires outside of the corporation limits, except when called to another town.

Burlington, Ia., has been awarded first place for Iowa for educational activities promoted during Fire Prevention Week.

Two pieces of fire apparatus of Harrisburg, Pa., collided while answering a fire alarm. Five firemen were injured and it is feared that two of the injured men have fractured spines.

Leon Toczko has been appointed Superintendent of the Electrical Department of New Britain, Conn. He will have charge of the fire and police alarm systems and he succeeds Superintendent George Cooley who has retired.

A series of talks on the activities of the Boston Fire Department is being broadcast over the Yankee network. These radio talks are given on Wednesday afternoons from 4:30 to 4:45 p.m.

A sand ejector which prevents apparatus from skidding while traveling on slippery streets, has been successfully tested by the Fire Department of Amsterdam, Holland. It was invented by a chauffeur of the department.

Columbus, Ohio, is considering a plan to add ten firemen to the force to man the new station in Northmoor. City Council appropriated $13,250 to buy new equipment for the house.

Detroit, Mich., has reduced its roll of city employees and 700 have been dismissed. The posts of 136 firemen were saved, pending an investigation of a plan to keep them on the pay rolls.

Fort Lee, N. J., will be the host to the annual convention of the New Jersey and New York Volunteer Firemen's Association which will be held next summer. It is expected that there will be representatives of 156 fire companies at the gathering.

Chief William F. Welch and Ex-Chief Edward E. Chase, of the Lynn, Mass., Fire Department, were guests of the Box 41 Associates of Lynn at a banquet and meeting commemorating the forty-second anniversary of the Great Lynn fire.

A plan of mutual aid has been started at a meeting of the Southeastern Group of the Kentucky Firemen's Association held in Barbourville, Ky. The association comprises the towns of Williamsburg, London, Corbin, Barbourville, Pineville, Harlan, Loyall and Middlesboro.

The Fire Department of Barstow, Cal., is erecting a one-story concrete block fire station to house two pieces of apparatus. Plans are being made to install fire alarm boxes to connect with the siren that has been recently installed. E. L. White is Chief.

Firemen of Beckley, W. Va., are repairing shoes for the needy. Material for resoling the shoes was purchased by the Mayor, and the work is being done without charge. Not only are the shoes repaired, but old shoes that are left at the fire station are fixed up and then turned over to the various charitable institutions.

Twelve firemen of Oceanside, L. I., were sentenced to terms of from six months to two years for setting fires in and near Oceanside. It is alleged that these men set fires in private homes, business places and in one instance on board a yacht. One of the men arrested is awaiting a mental examination.

Chief Edward J. Hunsinger of Massillon, Ohio, recommended that the various respective rural towns and townships purchase and maintain their own fire-fighting equipment in preference to hiring the Massillon Fire Department in times of emergency. He stated that his Fire Department was under no obligation to respond to fire calls outside of the city limits unless contracts existed either with the individual or the town.

New London County Association Formed

An organization for the interchange of ideas among the fire department heads has been formed in New London County, Conn., with sixteen Chiefs enrolled as members. The first meeting of the new organization, which is known as the New London County Fire Chiefs' Association, was held at Norwich, Conn., on February 2.

Henry R. Taft, Chief of the Norwich Fire Department was elected President of the association. Others elected to office were Vice-President, Chief Thomas H. Shipman, New London fire department; Secretary, Herbert P. White, Groton, and Treasurer Thomas Woodworth, Quaker Hill.

A set of by-laws governing membership and regulating the organization's activities was drawn up by a committee composed of R. L. Delagrange, Stonington; Charles D. Main, Stonington, and H. H. Park, Noank.

The association will hold meetings on the first Wednesday of each month. Meetings in the following months will be held in Stonington in March; in Noank, in May; in Pawcatuck in June; Yantic in July; Groton in August; Stonington district in September; Taftville in October; Norwich in November; Goshen in December; Quaker Hill in January, 1933; Old Lyme in February.

POSITIONS WANTED

These advertisements are inserted without charge as a service offered by FIRE ENGINEERING to everyone in the fire field. Use it.

Fire Apparatus Engineer

Thoroughly experienced as service manager and shop foreman, seeks connection as fire department master mechanic. Familiar with every phase of fire apparatus design, construction and maintenance. Can give best of references. Age 46, married; will go anywhere. Address: Box 465, c/o FIRE ENGINEERING, 24 W. 40th St., New York, N. Y. Mar.

Master Mechanic

Very capable and experienced fire apparatus engineer available for such a fire department position. Knows apparatus design, construction and maintenance from A to Z. Address: Box 500, c/o FIRE ENGINEERING, 24 W. 40th Street, New York, N. Y. Mar.

PROPOSED IMPROVEMENTS

Minocqua, Wis.—Fire Department urging that city purchase auxiliary fire equipment for rural fire protection, according to reports.

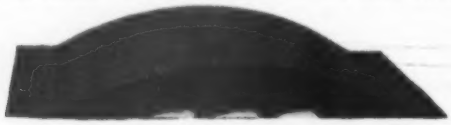
Sioux Falls, S. Dak.—National Board of Fire Underwriters recommended that fire alarm system be rebuilt, enlarged and operated in acordance with regulations of Board and that drill tower be erected. Wm. A. Sloan, Chief of Fire Dept.

Dealer Opportunity

Do you need more money? Substantial commissions paid to men who can close orders for a necessary piece of fire equipment. Territories available. Write now in absolute confidence. Address Box No. 515, c/o FIRE ENGINEERING, 24 West 40th St., New York City.

Metal Guard for Fire Hose

A pressed steel guard has been designed to be placed over fire hose so that emergency vehicles and general traffic will not be forced to detour because of fire hose stretched



Day's Metal Hose Bridge

across a street. These guards have been tested under 14¼ tons load. They are manufactured for protecting one, two or three hose lines. Five metal pins are placed on each end of the bridge to keep it from sliding.

The device is being marketed by Gus L. Day, Mendham, N. J., under the name of Day's Metal Hose Bridges.

Detector for Carbon Monoxide

An instrument for detecting the presence of carbon monoxide gas in a garage or other buildings, has been developed by the Skala Research Laboratories, Cicero, Ill. The device is about the size of a pencil and is used in connection with a small radio vacuum tube enclosed in a telephone bell ringer box. The box is placed where it may have a free circulation of air.

Increased Penalty Urged for False Alarm

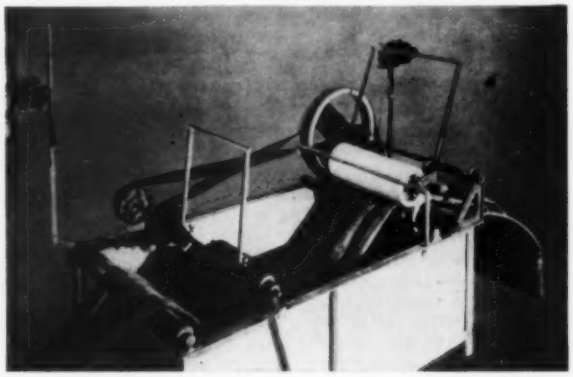
Fire Commissioner Dorman, of New York, is urging the State Legislature to take affirmative action on a bill now pending which if enacted into law would make the penalty for sending in a false alarm of fire, $100 or thirty days in jail. The existing statute calls for a penalty of $10 or ten days. New York City had 10,812 malicious false alarms last year or 24% of the total number of alarms during the entire year. It was an increase of 2,131 false alarms over the year 1930.

WM. JEROME DALY.

Graves to make another Eastern trip—R. J. (Dick) Graves, General Sales Manager of the American Rubber Manufacturing Company of Oakland, California, starts soon on another trip throughout the eastern part of the country. He expects to appoint some additional distributors in order to give his company complete sales coverage of the United States for their "Crackerjack" fire hose.

A Fire Hose Laundry

Fire departments in the United States, according to customary practice, wash all hose that has been used at a fire, and then the various lengths are placed on racks or a hose

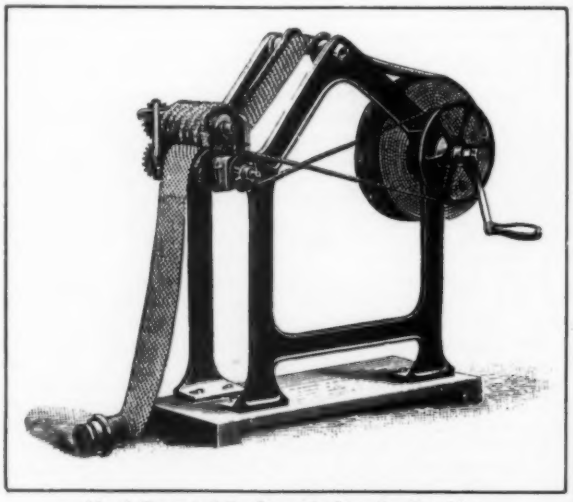


Fire Hose Laundry of Melbourne, Australia

drying tower to dry thoroughly. The hose is washed to remove any dirt that may have accumulated on the outer jacket.

English departments solve the problem in an entirely different manner. A machine is in use that washes the hose, scrubs the lengths and then wrings it to remove the superfluous water. In Melbourne, Australia, they have a power driven laundry unit.

A hand type apparatus is manufactured by a company in Manchester, England, for dry cleaning the hose. The hose



Hand Operated Brushing Machine for Fire Hose

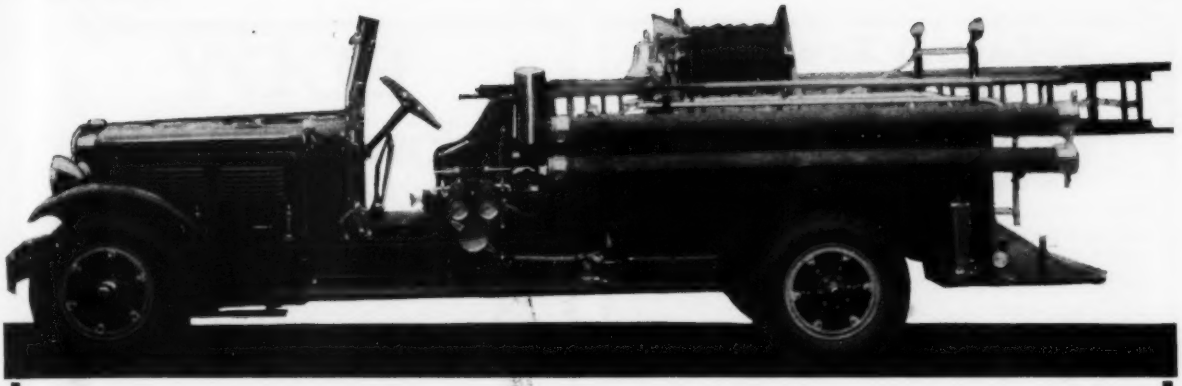
is passed through two round brushes so that both sides of the hose are cleaned by one operation. After passing through the brushes, the hose is rolled up into a compact bundle. The brushing machine is for linen hose.

Brosnan Urges Less Use of Water

An interesting article concerning the activities of Chief D. W. Brosnan of Albany, Ga., appeared in an issue of the Atlanta, Ga., *Journal*. The article carried a heading, "More Brains, Less Water, Simple Slogan of Georgia's Champion Fire Fighter."

In this article, Chief Brosnan stressed the advantages of a night patrol of uniformed firemen to prevent disastrous fires at night. These men are provided with small fire extinguishers and electric lanterns. Home fire risk inspections are made by school children on suitable questionnaire blanks.

Albany, Ga., has succeeded, through the work of Chief Brosnan and his men, in reducing the per capita loss to forty-eight cents. In 1916, this figure was $4.65.



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FIRE APPARATUS

Limited number of territories now open for Distributors. Write for information.

The impossible things of yesterday are now being done with Stutz Fire Apparatus.

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Now as never before in the history of fire apparatus, the dollar value is being built in each machine by Stutz.

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Sizes ranging from 300 to 1200 G. P. M.
Complete line of Hook and Ladder Trucks.

ASK ABOUT OUR TOWN AND COUNTRY MODEL

NEW STUTZ FIRE APPARATUS COMPANY, Inc.

HARTFORD CITY, INDIANA

BRAXMAR BADGES

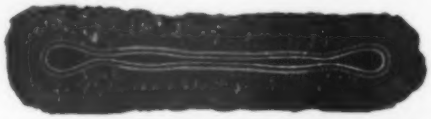
Standard for Over Fifty Years

Writing for Our Catalog is the First Step in Buying A NEW BADGE

MOST fire chiefs have a copy of our catalog. If you are one of the few without one on file, drop us a line and it will be promptly forwarded. You will be more than pleased with the fine looking array of badge designs. Thousands of fire chiefs, many of them well known to you, have bought their badges here during our half century and more of fire badge making.

C. G. BRAXMAR CO. 242 W. 55th Street, NEW YORK

Bi-Lateral Fire Hose



The one hose that does not require frequent replacements.
Always reliable for fire service no matter how old, if the jackets are intact.
Lined with three rubber tubes, specifically guaranteed for six years.

BI-LATERAL FIRE HOSE CO.

15 Park Row, New York, N. Y.
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EDDY
Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience go into their manufacture and they embody valuable and exclusive features.

Write for the Facts

EDDY VALVE CO.
Waterford, N. Y.
James B. Clow & Sons, Chicago Agents

Saves time - *and costly hose*

No. 1. (Capacity 5 to 7 tons; weight, each, 72 lbs.)
No. 2. (Capacity 5 to 12 tons; weight, each, 118 lbs.)

Complete information and Prices on request.

It's often necessary to move apparatus at a fire. Automobile traffic hates to be held up by a line of hose stretched across the right of way.
Why ruin your hose by driving over it? Or waste valuable time cutting off and disconnecting?
The Wausau Protector is a big time and money saver—easy to handle and carry. Order a set today, or write us for particulars

Wausau Fire Hose Protector Co.
1520 Harmon Place, Minneapolis, Minn.

Quick-Acting Reliable

Anderson-Hale Improved

FIRE STATION DOOR OPENERS

Over 1,000 sets of Anderson-Hale Fire Station Door Openers are in successful use. They provide simple, durable, quick-acting doors that open inward. No obstruction to sidewalk. Attractive in appearance, cannot sag, closes tight, excludes cold, gives clear opening.
Opens from driver's seat or from floor. Many repeat orders from users.

Write for complete information.

The Anderson Coupling & Fire Supply Co.
Mfrs. Motor Fire Equipment and Fire Supplies
Kansas City, Kansas

COMFORT AND SECURITY WITH THE CAIRNS LATEST LOW HEAD CUSHION LINED HELMET

COMFORTABLE AS YOUR OLD FELT HAT; WON'T SHAKE OFF

Never go to a fire without the protection of a good helmet. It may save your life.

Send for your copy of Catalog No. 227, showing this latest improvement.

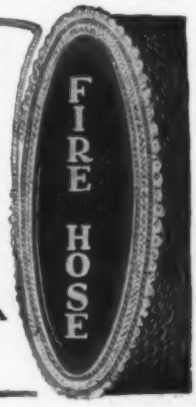
CAIRNS & BROTHER
72 GRAND STREET — Established 1836 — NEW YORK

JOHN H. CLAY, INC.
1320 Ridge Ave., Philadelphia, Pa.
Established 1864

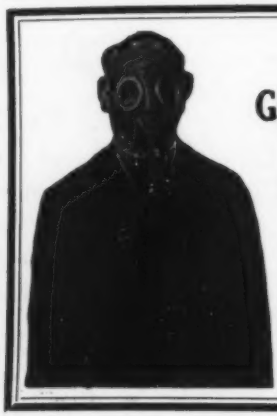
Clay Automatic Door Opening Devices for Fire Station Doors Opening either In or Out. Save valuable minutes in getting to fires. Send for Bulletin.

Baker Fabric

A jacket weave which provides multiple jacket strength with single jacket flexibility. Write for details.



MANUFACTURED EXCLUSIVELY BY
HEWITT - GUTTA PERCHA
RUBBER CORPORATION
BUFFALO, N. Y.
(Also makers of single and double jacket hose)
"Territories Available"



New Victor Gas and Fume Mask

Better Rubber. Longer Life. Better Fitted. Moulded to Fit the Face. Better Vision. Renewable Lenses. Better Air. Better Work. Low Prices. High Quality.

Over 5,000 Victor Gas Masks in Service

Full Line Fire Dept. Supplies and Equipment

New 43 Edition Catalog on Request

The Woodhouse Mfg. Co., Inc.
156 Chambers St., New York
D. A. Woodhouse, Pres. and Gen. Mgr. — George J. Kuss, Vice-Pres. and Treas.

The Chemistry of Fire

(*Continued from page* 98)

the building throughout the entire area of the building. Heated air rises, and heated air expands. The higher the temperature to which we heat the air the more it expands, and the more rapidly it rises. Therefore, the general tendency of the spread of fire is upward.

Need of Oxygen to Sustain Fire

Builldings are relatively air-tight. We build them so to keep the warm air inside during the winter weather. When substances burn they consume the oxygen contained in the air within the building. The atmosphere which surrounds us contain about 20% oxygen. When the oxygen content of the air is reduced, combustion is retarded. Reducing the oxygen content of the air to about 16%, the oxidizing process cannot continue, and our fire is lessened, if not extinguished. A human being can live in an atmosphere with as low as 8% of oxygen for quite a period of time.

Gases Formed by Combustion

When combustible materials are heated to their oxidizing temperature, a gas is formed. When this gas received all of the oxygen it desires, we have complete combustion. This you may see in the flame produced in the gas stove. When this gas does not receive its requisite amount of oxygen, combustion is incomplete and different forms of gases are produced. You may know them as smoke. You have observed that there are two colors of smoke, black and grey. Grey smoke is the result of relatively complete combustion and indicate that the heated substance has received a good supply of oxygen. Black smoke is the result of incomplete combustion; it has not received its full supply of oxygen to complete combustion, and desires more oxygen. This is commonly known as carbon monoxide. You know its effect upon the human being. The hot gases resulting from a fire in a building spread throughout the structure; because of the tightness of the building there is an inadequate supply of oxygen; combustion is incomplete; carbon monoxide has been formed; it is ravenous for more oxygen; when the building is opened up and fresh air is allowed to rush in the oxygen necessary to complete-combustion is supplied. This condition is what produces the back flash, or explosion, which has sacrificed the lives of so many devoted to the service of fire extinguishment. When black smoke is observed issuing from a building extreme caution should be observed, both in entering the building, and in attempting to ventilate the building. The hot gases, being lighter, should be permitted to escape from above. As little fresh air as possible should be admitted below. At this point we are encroaching upon the subject of ventilation, which is not a part of this paper.

In the foregoing the reader has gained a brief knowledge of the origin of fire, and the formation of the gas, or smoke, which accompanies all fire.

The Principle of Fire Extinguishment

We may now concern ourselves with the extinguishment of fire. The principle of fire extinguishment is simple. In order to have a fire a substance must be heated to its temperature of combustion, and there must be present a supply of oxygen. In order to stop a fire the process is reversed. The temperature of combusting materials must be lowered below the point at which the oxygen of the atmosphere will unite with them, or the supply of oxygen must be kept from contact with the combusting materials for a sufficient length of time to allow them to cool below their combustion temperature.

In the art of fire extinguishment the reducing of the temperature of the burning material is referred to as the cooling process; preventing the oxygen from contacting the combustible material is referred to as the blanketing process. For the past many years, in the art of fire fighting we have been concerned almost solely with the use of the cooling process. Water has been most generally used as the extinguishing agent, because of its cooling effect. When we cool a substance we take away from it the heat units generated by the oxidizing process. Water may exist in three forms, depending upon its temperature. Below 32 degrees F. it is called ice; between the temperatures of 32 and 212 degrees F. it is a liquid. Above 212 degrees F. its exists in the form of vapor, known as steam. At or about the temperature of 1500 degrees F. it is disintegrated into its two elements, hydrogen and oxygen.

Extinguishment of Fire by Water

Now we are prepared to briefly study the extinguishment of fire by water, this being the process with which all are most familiar. Responding to an alarm of fire, you approach the fire as closely as possible with your hose line, or other extinguishing device. The human body cannot stand a temperature much higher than 120 degrees. This prevents you from getting closer to the fire than the zone in which this temperature exists. From this point you attempt to project your stream of cooling liquid on to the fire. The temperatures produced by various materials burning differ. Burning wood produces a temperature of around 4,000 degrees F. You have found melted glass in a fire; it takes approximately 1,900 degrees F. to melt glass. Somewhere between the point where you are standing, which we will assume is the area in which the temperature is approximately 120 degrees, up to the heart of the fire, which may be around 4,000 degrees, we have areas of variable temperatures. As the stream of water leaves the nozzle of your extinguishing device it passes from a temperature of around 120 degrees to that high temperature existing in the heart of the fire.

Problems Involved in Fighting Very Hot Fires

As the stream travels through space, it first encounters a temperature of 212 degrees, or above. In this area it is turned from a liquid into a vapor, or steam. As it passes on, the steam becomes super-heated. When we have reached the point of around 2,000 degrees, the water is disintegrated into its gaseous elements. I presume that you, in your attempt to fight fires with water, have seen the fire flare up, or flash, when you have hit it with the hose line. When this flash occurred, your water was being disintegrated, or you may say it was burned. Chemical science tells us that more heat units are required to disintegrate water than are given back in the form of combustion. We have no reason to doubt this statement. When water has been disintegrated into its hydrogen and oxygen elements, they are in direct proportion to form combustion, resulting in very high temperature. The production of these high temperatures results in an increased flow of air, consequently more oxygen is supplied to the fire, and we find that the burning condition of the fire has been materially intensified. At this point it has probably occurred to you that it is hopeless to attempt to fight a hot fire with water, or the cooling process. This is logically true.

Fighting the Fire from the Bottom Up

Heated gases tend to rise. Therefore, the tendency of a fire is to burn up, and not down. Hot gases are given off in large volumes from the burning material. Fighting a fire

Smoky 3-Alarm Fire in Stores at Boston

The illustration shows the Boston Fire Department at work at a fire at Mattapan Square in which seven stores were burned out. Chief Fox, of the department, was in charge at this blaze, which was a very smoky one and hard to handle, owing to goods piled high in the basements.

from the top down, the cooling process is only effective upon the gases liberated. The burning material is continually giving off additional heat units. Now suppose we attack the fire with the cooling process, projecting our water into the areas of lower temperatures, or fighting the fire from the bottom up. The water is turned into steam, and the steam is super-heated. This absorbs heat units from the fire. Should the steam pass through the seat of the fire it tends to lessen the oxygen content of the air passing into the fire. We have lessened the generation of heat units, although our steam vapors may have passed up into the hotter atmospheres and become disintegrated. Fighting the fire from the bottom up, the cooling process is much more effective, and we have utilized more of the factors of heat absorption by water in this method of attack.

To convince yourself of this theory, take a fire in your stove at home, open up the drafts, let the fire burn freely, shake it down so that the grates are covered with hot coals. Take half a tea cup full of water and throw it on top of the fire. There is a little puff and the water has had no apparent effect on the fire. Take a similar quantity of water, open up the ash door, throw this water up into the bottom of the fire. You will notice that you have produced a black spot. Any stream of water which does not make a black spot when it hits a fire is useless, as a fire extinguishing agent. By fighting fires from the bottom up, you first stop the generation of the heat waves. You use the exclusion of oxygen process by the generation of steam. You have lessened the probable spread of fire in other portions of the building, as such combustible materials which have been brought up to the combustion temperature by the radiated heat wave are lacking in oxygen supply to complete combustion. In other words, the products of combustion are being, in a measure, utilized to retard combustion.

Considerable thought is being given today to the extinguishment of fire by reducing the oxygen content in the air. Inventive genius has given us the gas blanket, which has proved to be effective on small fires. There is no reason why a more extended use of this principle will not be further developed.

Summarizing the chemistry of fire, from the viewpoint of the fire fighter we find:

That in order to have a fire, combustible substances must be heated to a point at which oxygen will combine with the material.

Therefore, there must be a combustible substance, a temperature, and a supply of oxygen.

We find that in order to stop a fire, the combustible substance must be cooled below the temperature at which oxygen will combine with it, or the supply of oxygen must be reduced, or taken away.

Therefore, to stop a fire, we must cool the combustible substance, or exclude the oxygen from contact with same.

Illustrations, courtesy "Safeguarding the Home Against Fire."

Smoke Generator for School Work

To produce smoke and gas conditions for training firemen in the use of gas masks, the Central Railway Signal Company, Newton, Mass., has developed a smoke and gas generator in the form of a fusee. It is capable of generating dense volumes of heatless smoke and gas for about five

Smoke and Gas Generator

minutes, and because there is an absence of heat, the manufacturers claim that it can be safely used in non-fireproof buildings.

A large number of Chiefs witnessed a demonstration of this generator under the direction of Chief Randlett, Newton, at Engine No. 2. The visiting Chiefs were greatly impressed by the absence of heat and the elimination of possible burns while coming in contact with hot metal parts in a smoke room.

The fusee was developed by Walter L. Wedger, Chief Chemist, and J. Wiley Edmands, Mechanical Superintendent of the Central Railway Signal Company.

EX-CHIEF MULCAHEY HONORED BY WESTCHESTER COUNTY CHIEFS

Presented With Traveling Bag at Dinner Tendered Him by Association and Made Honorary Life Member

AT a testimonial beefsteak dinner tendered to Ex-Chief James J. Mulcahey, of Yonkers, N. Y., by the Fire Chiefs' Emergency Plan, of Westchester County, N. Y., he was presented with a handsome traveling bag by the members as a token of respect and for his great interest and many services to the Plan since its inception three and a half years ago. The Chief was further honored by being made an honorary Life Member of the Plan. He is the present Recording Secretary of the International Association of Fire Chiefs.

Ex-Chief James J. Mulcahey

The dinner was held at the new fire house of the Eastchester, N. Y., Fire Department at Union Corners. Preceding the dinner, a regular meeting of the Plan was held, with President D. Wiley Travis, Peekskill, in the chair. He introduced Supervisor R. A. Bennett, of Eastchester Township, who welcomed the members.

There was considerable discussion on the subject of the zoning arrangements for calling assistance in cases of large fires or conflagrations. Ex-Chief Lemon reported that a well attended meeting of Fairfield County, Connecticut, Chiefs had been held, and that an association similar to the Plan would probably be formed. President Travis emphasized the necessity for regarding the Westchester Plan as the parent organization.

Chief Brennan, Pelham Manor, called attention to the importance of the officer calling for assistance making sure that there was enough water to supply the assisting apparatus. He said that it was foolish to ask for three or four pumpers and then find that the water was insufficient to supply them all. Chiefs should give this matter considerable thought. A definite plan was adopted to avoid outsiders calling for assistance in the name of the Chief.

Captain Dawkins announced that the book containing list of apparatus and equipment of all of the Westchester Departments would soon be ready for distribution.

A nominating committee, consisting of Chiefs Towle, Griffin, Grabb and Veit, and Secretary Riviere, was appointed to present the names of officers at the annual meeting.

At the invitation of Chief Veit, the Plan decided to meet at Stamford, Conn., on the evening of Marsh 16.

At the dinner, Chief Mulcahey, after he had been presented with the traveling bag by Secretary Riviere for the Plan, expressed his appreciation of the gift and of the honor conferred on him through the life membership. He spoke of the accomplishments of the Plan and what he expected would be brought about by its labors.

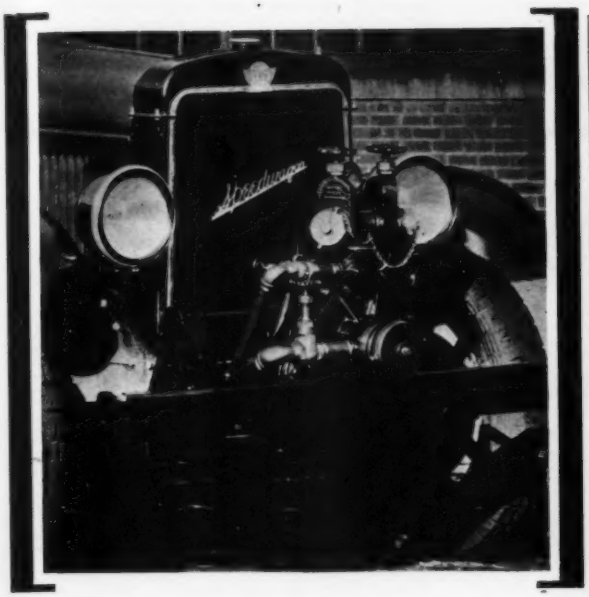
Among other speakers were Mayor Leslie V. Bateman, of Mount Vernon; Supervisor Bennett, Eastchester Township; Judge Hoop, of Bronxville; Deputy Chief Marshal, of the New York Fire Department; Fire Commissioner Murray, Eastchester, and Chief Towle, Larchmont, "Father of the Plan."

There were about eighty members and guests present.

Washington, D. C., Orders Apparatus

The District of Columbia has placed a $50,000 order with Peter Pirsch & Sons Company, Kenosha, Wis., for four pieces of apparatus. The order includes two 85-foot hydromechanical aerial ladders, and two combination pumpers.

Springfield, Mass., has received a tractor drawn 75-foot Seagrave aerial ladder. Delivery of another truck of this type is expected for the Ashland Street Station.



Ideal Apparatus to Meet 1932 Budgets

YOU can save your community hundreds of dollars and still have first class, adequate protection by insisting upon the Barton Fire Pump.

With a Barton Pump no special, high priced fire truck is required. Any standard commercial chassis can be successfully used—and without costly changes, special transmission, etc.

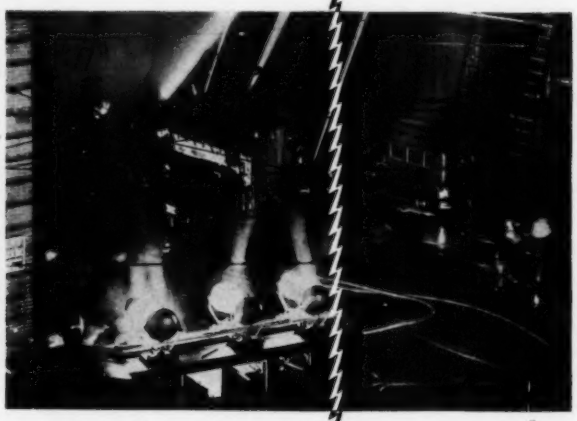
As shown above, the Barton Pump mounts on front. It is driven by the truck motor in a simple, positive manner, involving a patented principle which protects both pump and motor from wear or injury.

Both the U-34, 300-gallon pump and the U-45, 500-gallon pump have passed the Underwriters' 12-hour Tests. Being centrifugal type, they will pump clean or dirty water from city mains or from suction. They are automatically primed.

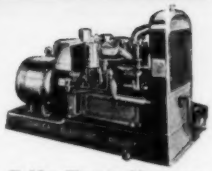
A Barton Fire Pump gives you the utmost in dependable performance—at much lower cost. Consult your apparatus dealer, or write us for Bulletin 60. AMERICAN STEAM PUMP COMPANY, Battle Creek, Michigan.

BARTON
FIRE PUMPS

Light up that ladder, QUICK!



Actual photograph of Baltimore Post Building fire in 1931. Notice the light truck — equipped with Kohler Plant 10 A-1 — floodlighting the rescue work.



Kohler Electric Plants generate standard electric current at 110 or 220 volts A. C. or D. C. Capacities vary from 800 watts to 25 K. V. A. The Kohler Plant shown above is Model 10 A-1.

SPOT those windows . . . rip through the center wall . . . turn water on the left wing. . . . When excitement runs high and Baltimore's Fire Department is fighting dangerous night-fires, *light as well as water* comes to the rescue.

The picture above was taken during the Baltimore *Post's* fire last year. It shows one of the fire department's light trucks spotlighting operations as the smoke rolls out of the blazing building. Electric current for the floodlights, as well as current for extension lights carried into the building by firemen, comes from a Model 10 A-1 Kohler Electric Plant. The Baltimore Fire Department also has two Model 5 A-1 Kohler Plants installed in its fire-alarm building, to sound alarms in case the city's service fails.

In large cities and small cities, as well as in rural, isolated communities, Kohler Electric Plants have become an important weapon in fire fighting. They insure light where you want it, when you want it. There are small models which fit on the regular fire trucks and large ones for large city fire departments.

Send coupon for detailed information about Kohler Electric Plants and their use by fire departments. Kohler Co. *Founded* 1873. Kohler, Wis.—*Shipping Point,* Sheboygan, Wis.—*Branches in principal cities.* Manufacturers of Kohler Plumbing Fixtures.

KOHLER OF KOHLER
ELECTRIC PLANTS

KOHLER CO., Kohler, Wisconsin

Gentlemen: Please send catalog describing Kohler Electric Plants.

*Name*_____ FE-3-2

*Street*_____

*City*_____ *State*_____

FALSE ALARMS

NEARER CORRECT

Jeremiah was a most devoted husband. While he had lived he was a member of the Benevolent Association, paid his pension allotments regularly and did every thing possible to care for his wife, in case an accident should befall him while in the fire service. He met a hero's end.

After careful deliberation his wife had inscribed on the tombstone:

"The light of my life has gone out."

For a time this proved satisfactory. But the widow fell in love again and wanted to change the inscription so that the statement would be true. The tombstone now carries the message:

"The light of my life has gone out—but I have struck another match."

When a man has gone to the expense of buying a new car these days, it is a question of which will break down first.

VALUABLES SAVED

"Sorry to interrupt you, pal," said one to a new arrival at the club, "I just got word that your house burned to the ground, and only the basement remains."

"Thank goodness! My home brew is safe."

A canoe is like a small boy—both behave better when paddled from the rear.

A TRUE FRIEND

"Well his business has certainly done a lot for him."

"Oh yes—it's gone through fire and water for him."

The trouble with some department rookies is that they get too many pats on the upper back and too few on the lower.

NO SURPRISE

Up in the bunk room Raffity said to Sullivan, "When are you going to get appointed Lieutenant?"

"The fifteenth of next month," answered Sullivan.

"Waren't you surprised?"

"Naw. I have been expecting it for years."

Then there was one fellow that we know who passed twenty speakeasies without going in one—he was in a patrol wagon.

A SELECTION

Compiling figures for the annual report to the Board of Fire Commissioners, was not the best job possible, in the eyes of the Chief. And so in a diplomatic manner, he wished the task on to a subordinate officer. The unlucky one struggled with the figures on the number of fires and their losses, and then after several hours, he called on the chief.

"I've added those figures ten times, sir," he said to the Chief.

"That's fine work."

"And here, Chief, are the ten answers."

The greatest gambler of all was Lady Godiva. She put everything she had on a horse.

SAFETY FIRST

"And what did you give baby for his birthday present?"

"We opened his money box and we bought the little darling a fire extinguisher which we keep in the kitchen."

A girl may love you from the bottom of her heart, but there's always room for some other guy at the top.

OUT OF PRACTICE

"'Ere you are," remarked the exasperated wife, "just 'ome after doin' two years for arson, and now you can't even make the kitchen fire draw."

PROOF FIRST

A volunteer company arranged to have a private fire school of its own so that the men might become accustomed to the use of the various department tools. An instructor was engaged and he was to collect a share of the expenses from each one taking the course.

He approached one of the company members and said: "You must pay your tuition in advance for the fire course."

The other was highly indignant and replied: "Pay tuition in advance? How do I know you can teach me anything?"

Kissing your wife is like scratching a place that doesn't itch.

MOVE OVER

Rumors find a fertile field in the Fire Department. Plausible stories are told to the incoming shift, and then by contact with other firemen, the rumors spread to more stations.

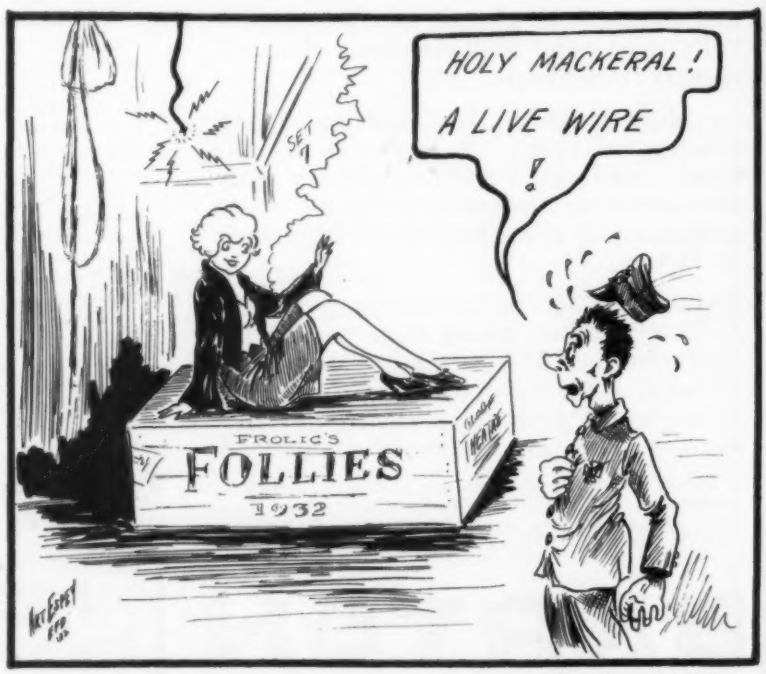
An unusually tall rookie had completed his preliminary course and he was scheduled to be assigned to Station 4. The news reached the men at that house even before the official notice.

"That big bozo has to have a bed over seven feet long," remarked one.

"Say, that's a lot of bunk," answered the other.

Everything comes to him who waits except taxicabs in rainy weather.

The world is neither square nor round. It's crooked.



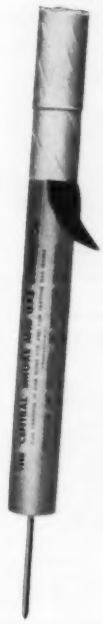
—Drawing by "Art" Espey

"Don't Overlook the Other One, Inspector!"

IT'S

NEW!

THE
"CENTRAL"
SMOKE AND GAS
GENERATOR



FRICTION CAP SAFETY IGNITION
Requires no matches to ignite

FOR TRAINING MEN IN THE USE OF GAS MASKS and FOR TESTING GAS MASKS—CAN BE USED IN NON-FIRE-PROOF ROOM or TENT—GENERATES DENSE CLOUDS of HEATLESS SMOKE and GAS—DOES AWAY WITH THE OLD FASHIONED BONFIRE METHOD

12 in a box.....$ 4.50
72 in a case..... 27.00

Sold by supply dealers
or write direct

Dealers!—Write for Sales Proposition

Central Railway Signal Company, Inc.
NEWTON, MASS.

NATIONAL
FD (Fire Dep't) Type Ejector

for continuous foam production

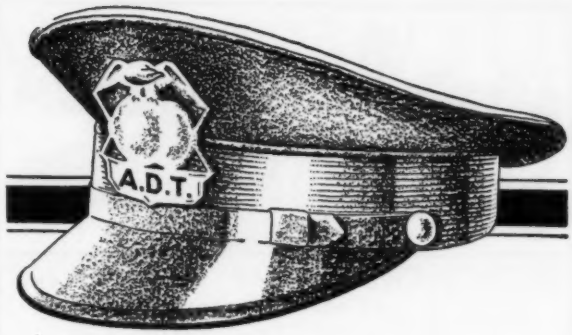
HAZARDS

Inflammable liquids such as gasoline, oil, paints, varnish, etc., are best protected through the medium of foam.

NATIONAL Foam Equipment and chemicals are approved by the Underwriters' Laboratories, Factory Mutual, U. S. Navy, Bureau of Steamboat Inspection, etc.

Write for unusually interesting offer to Fire Departments.

NATIONAL FOAM SYSTEM, INC.
Philadelphia and Branch Offices



A FRIEND OF YOURS

A.D.T. SYSTEM

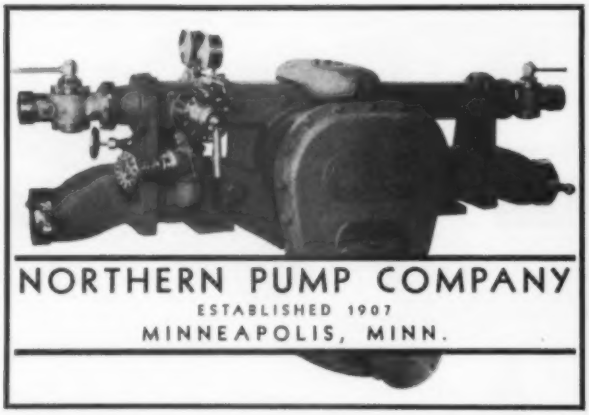
● A fire department always likes to get a blaze before it has a chance to get very far. The smaller the damage done—the greater the credit to the smoke-eaters.

● The American District Telegraph Company is ever on the alert to help *you* keep fire losses at a minimum. Night and day, its protective signalling apparatus keeps watch in over 250 communities throughout the United States.

● *You* have played an important part in placing A. D. T. service in these communities...because you and the A. D. T. are working for the same purpose...PROTECTION.

● A. D. T. is always glad to consult with fire fighters anywhere...always glad to send instructive literature on their fire protective services.

CONTROLLED COMPANIES OF
AMERICAN DISTRICT
TELEGRAPH COMPANY
155 SIXTH AVENUE · NEW YORK N.Y.



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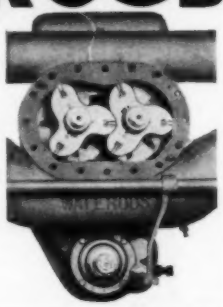
ESTABLISHED 1907
MINNEAPOLIS, MINN.

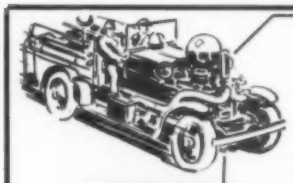
WATEROUS
DEPENDABLE FIRE PUMPS

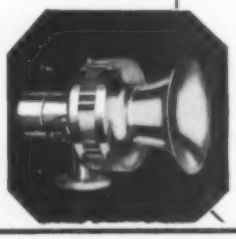
Built by the pioneer producer of automotive fire pumps. Proven design and rugged construction.

WATEROUS COMPANY
St. Paul, Minnesota

Waterous







FOR A CLEAR STREET AHEAD

Fire apparatus and police patrols reach their destination quicker and safer when a FEDERAL SIREN screams its warning down the street. For at least a mile ahead this powerful siren opens a lane for safe, speedy travel. Specify FEDERAL SIRENS on all new apparatus. Modernize old equipment with the FEDERAL. Write for our new Bulletin No. 38.

FEDERAL ELECTRIC CO.
8702 South State St.
Chicago, Illinois

COOPER FIRE ALARMS

PERFECT CODING

Operated from Present Systems
Powerful
Instant Response
Penetrating

Produce more sound and cost less than ordinary alarms. Many sizes to solve any requirements. One community saved $788 in operating expense only by using Cooper Alarm. Write for bulletins and let us solve your fire alarm problems. Coded systems $250 up.

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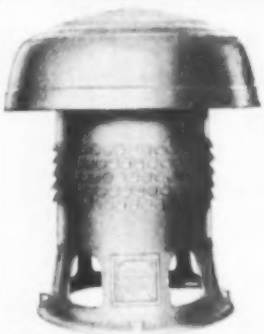

STERLING FIRE ALARM SIRENS

For Fire Departments.
A Siren for every need.
General Alarm Code Apparatus

Send for Bulletin No. 667

The Sterling Siren Fire Alarm Co., Inc.
60 Allen Street Rochester, N. Y.

The FINEST LARGE NOZZLES *and* DECK GUNS are "Made by MORSE"

Practically every well known Fire Boat in service in this country today is equipped with MORSE "Invincible" Nozzles, many pieces of fire apparatus are also equipped with these exceptionally fine nozzles. They are the result of nearly a hundred years of experience in producing nozzles that are a lot better than the general run of fire nozzles.

ANDREW J. MORSE & SON, INC.
221 High Street BOSTON, MASS.

THE NEW EASTMAN DELUGE GUN

is a portable turret pipe that can be used on the ground or mounted on the apparatus. This photo shows our three-way gun used on the ground, connected to two lines of hose. This gun may be furnished with either two-way, three-way or four-way Siamese, as desired.

Write for new general catalogue
SAMUEL EASTMAN COMPANY
Concord, N. H., U. S. A.

Hedberg Super Sirens
"The World's Best by Test"

offer the world's greatest and most versatile range of choice involving sizes and methods of operation.

Write for descriptive matter showing sirens that have never lost in competition.

J. N. HEDBERG
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SAN JOSE CALIFORNIA

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1 Acid Siphons
2 Adaptors for Changing Hydrant Threads
3 Acid Jars and Rings
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19 Brake Linings
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35 Extinguishers, Carbon Dioxide
36 Extinguishers, Soda-Acid
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38 Extinguishers, Foam
39 Extinguishers, Powder
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97 Sprinkler Supervisory Service
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It's a wise chief that keeps right up-to-date on modern fire fighting equipment.

You can do this by obtaining and reading new literature from leading manufacturers of fire equipment.

Literature on any equipment listed on this page will be sent you if you will just fill in and mail us the coupon below. Stop right here!

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As a fire protection official I should like to have descriptive literature and complete information mailed to me, without cost or obligation, on the equipment indicated by the following numbers:

Name.....

Position.....

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City and State.....

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3-32

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FIRE APPARATUS

is the sort of equipment that any chief should be proud to add to his department. In actual service it has proven that it pays to deal with a company that takes particular pride in every job they turn out.

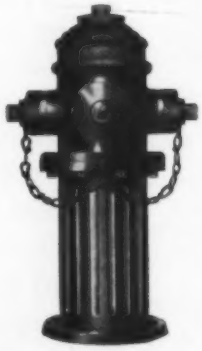
Every practical type of fire fighting machine is built at the Maxim plant. Whether you plan buying within the next few months—or the next few years—we urge you to send us your requirements and let us help you select the right type of equipment to fill your needs.

MAXIM MOTOR COMPANY

MIDDLEBORO, MASS.

Metropolitan Sales Agents:
The Woodhouse Manufacturing Co., 156 Chambers Street, New York

Here's why
FIRE CHIEFS recommend



CRISPIN

FIRE HYDRANTS

FIRE departments should demand hydrants especially designed for fire service. The CRISPIN hydrant was designed to help you fight fires more efficiently, Chief. Before you replace old hydrants or install new ones, we suggest you let us send you our folder which completely describes CRISPIN hydrants and just why you should recommend them for your city or town.

MULTIPLEX MFG. CO.

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Offices: 165 B'way, New York. *Plant:* Berwick, Pa.

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is the RECOGNIZED FIRE ALARM

HERE is something that every fire chief should know about. It offers you greater efficiency in getting to fires. It gives you a better chance to lower fire losses. It stamps both you and your town as being one of those who get what they need when they need it.

The bell or whistle type of alarm went out with the old horse-drawn apparatus. It's up to you chiefs to modernize. Every move you make in that direction makes your town a much safer place in which to live.

Every town that owns a Cosgrave Siren considers it a fine investment. In no way is it an expense, even in these times, for it is a well-known fact that depressions mean more fires than normal. Speed in getting to this type of fire may mean a great deal toward uncovering the cause of the fire.

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When you consider the years of service a good siren gives you any of them are economical, but none of them give you the service you get in the

COSGRAVE CODE SIREN

Its first cost is its only cost. It is so simple that your local department electrician can install it easily. You owe it to yourself to get full information. Write today.

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